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BACTERIAL SENSITIVITY TO ANTIBIOTICS

HAZEL BUBB, B.Sc., *South African Institue for Medical Research, Port Elizabeth*

The purpose of this paper is twofold. Firstly, it is to indicate the common pathogenic microorganisms (other than *M. tuberculosis*) which were isolated in this laboratory from 1955 to May, 1958. The source of these microorganisms is also given. Secondly, it is to demonstrate their sensitivity to the available antibiotics.

The pathogenic organisms most commonly isolated, in order of frequency, were: *Staphylococcus aureus*, *Escherichia coli* and *the proteus group*. They were tested against the following antibiotics: Penicillin, aureomycin, terramycin, chloromycetin, erythromycin, novobiocin and streptomycin. The total number of organisms tested was 1607.

METHOD

For all these tests the dried filter-paper disc was the method employed. The discs were prepared in the laboratory and used in the following concentrations: Aureomycin, terramycin, chloromycetin and streptomycin 5 and 25 μg. per disc, novobiocin 5 and 30 μg. per disc., erythromycin 2 and 10 μg. per disc. and penicillin 10 units per disc.

Blood agar plates were inoculated with the organism to be tested and when these were dry the discs were applied. Results were read after 15-18 hours' incubation at 37°C.

The disc method does not allow exact quantitative readings to be made, but it does indicate sensitivity or resistance by the presence or absence of inhibition zones. In some cases resistant colony variants have been observed within the clear zones. There has been some controversy regarding the reliability of these *in vitro* tests in selecting the best antibiotic for clinical use. Nevertheless, the majority of cases show good correspondence.

Staphylococcus Aureus

Altogether 838 tests were carried out. The organism was isolated from the following sources: Abscesses, wounds, septic skin lesions 612, urinary infections 47, sputum 36, vaginal swabs 33, throat and nose 29, eye swabs 27, blood cultures 9 and elsewhere 46. Table I shows the results of the sensitivity tests.

It will be seen that novobiocin is the one to which there is the greatest sensitivity, while penicillin is the one which is least effective. Aureomycin, terramycin, chloromycetin and erythromycin are intermediate in their effect. Hence these observations show that novobiocin is the most generally

TABLE I. SENSITIVITY % OF STAPH. AUREUS TO ANTIBIOTICS

Year	*Total No.*	*Penicillin*	*Aureomycin*	*Terramycin*	*Chloromycetin*	*Erythromycin*	*Novobiocin*
1955	296	34	64	63	97	97	
1956	182	34	64	64	95	95	100
1957	230	15	59	51	92	87	99
1958	130	31	52	54	86	87	96
1955-58	838	29	59	58	92	92	98

suitable antibiotic for staphylococcal infections. The high degree of resistance to penicillin is already well known. It is the newer antibiotics (erythromycin and novobiocin) that are the most effective, and strains which were only sensitive to these two antibiotics, or novobiocin alone, have been encountered. In *S. aureus* infections, sensitivity tests would appear to be the quickest guide to the practitioner in selecting the appropriate antibiotic.

Escherichia coli

Altogether, during this period, 415 cultures of *E. coli* were isolated from the following sources: Urinary infections 293, vaginal swabs 45 and wounds, abscesses, ulcers 77. The results of the sensitivity tests are set out in Table II.

From these figures chloromycetin appears to be the most generally effective antibiotic against *E. coli*, while

TABLE II. SENSITIVITY % OF E. COLI TO ANTIBIOTICS

Year	*Total No.*	*Aureomycin*	*Chloromycetin*	*Terramycin*	*Streptomycin*
1955	148	78	93	86	73
1956	58	72	74	70	64
1957	140	51	82	64	66
1958	69	52	84	60	66
1955–58	415	63	83	70	67

aureomycin is the least effective. Within the last 2 years the sensitivity to aureomycin has decreased considerably, while the figures for terramycin and streptomycin also show a decrease. It is moreover demonstrated that the tetracyclines show partial drug resistance.

Proteus Group

Altogether 354 cultures of this group were isolated during this period. The sources of these were as follows: Urinary

infections 159, wounds, abscesses, ulcers 102, faeces 41, vaginal swabs 27, ear infections 19 and sputum 6. Table III shows the results of the sensitivity tests against these cultures.

It will be seen that the members of the proteus group are highly resistant to aureomycin and terramycin and somewhat

TABLE III. SENSITIVITY % OF PROTEUS TO ANTIBIOTICS

Year	Total No.	Aureomycin	Terramycin	Chloromycetin	Streptomycin	Novobiocin
1955	107	6	18	55	54	
1956	62	8	8	68	61	
1957	106	8	10	58	68	86
1958	79	8	11	63	78	77
1955-58	354	8	12	61	65	81

more sensitive to chloromycetin and streptomycin. Novobiocin sensitivity tests were introduced in 1957 and, although the number tested to date is not very high, the results indicate that it is a useful antibiotic in combating proteus infections.

Experience in this laboratory therefore shows that the 3 commonest pathogenic organisms, exclusive of *M. tuberculosis*, are staphylococci, *E. coli* and proteus, and that the 3 antibiotics with the widest effectiveness are novobiocin, erythromycin and chloromycetin. This does not mean that on occasion chloromycetin, for example, is not effective, and perhaps even more effective than novobiocin, against staphylococci, or that novobiocin is not effective against proteus. But when therapy is instituted without the guidance of sensitivity tests, or while awaiting the results of such tests, there can be no doubt that the drugs of choice for the treatment of staphylococci and *E. coli* are novobiocin and chloromycetin respectively.

DISCUSSION

The performance of sensitivity tests of the commoner bacterial pathogens to the various antibiotics, as they became available for therapeutic use, has become part of the routine work in the medical laboratory. The importance of laboratory control of such therapy has therefore been recognized. Most, if not all, bacterial infections can now be controlled and cured by the correct use of a suitable antibacterial agent. It is essential, then, to know which is the effective antibiotic as soon as possible, since the range of the various preparations varies considerably and, also, different strains of many bacterial species do not react consistently towards the antibiotics. It is therefore not possible in every case to predict clinically the sensitivity of any particular organism. In such cases laboratory tests have proved their value. Bacteriological tests are necessary in the first instance to identify the causal organism, on which antibiotic sensitivity tests can then be carried out. These *in vitro* tests indicate, within limitations, to which antibiotics the organism is sensitive or resistant, and provide the most convenient guide for therapy.

The picture of antibiotic sensitivity is ever-changing, due partly to the development of resistant strains and to the discovery of newer antibiotics. Giles and Shuttleworth[1] have analysed the figures for sensitivity tests carried out in a large hospital laboratory in England. Comparison of the figures quoted with those in this paper shows the general picture of sensitivity and resistance of the organisms to be similar. However, the percentage sensitive, especially with regard to *E. Coli*, is appreciably lower in the present series under examination, although there has been no significant rise in resistance to the antibiotics over the past few years, except possibly to aureomycin. It has been stated by Giles and Shuttleworth[1] that most American writers also record a significantly higher resistance rate.

The resistance of proteus strains has remained at a consistent high level. The isolation of these organisms from a wide variety of lesions, where they are probably secondary invaders, is becoming more and more frequent. As has been stated before in the literature, this may be due to the large-scale use of the tetracyclines and penicillin, which effectively remove the susceptible organisms, but favour the survival of resistant strains.

At present the sensitivity of *E. coli* and proteus organisms is being tested against nitrofurantoin. Although the number of tests is not yet high enough to warrant any justifiable conclusions, it would appear that the sensitivity to nitrofurantoin closely follows that of chloromycetin and streptomycin. A few strains sensitive to this agent only, and resistant to antibiotics, have been isolated.

SUMMARY

The sensitivity to antibiotics of the commoner pathogenic bacteria is surveyed. *S. aureus* is the most frequent pathogen isolated in the laboratory. The highest resistance of this organism is to penicillin, while erythromycin and novobiocin are the most effective.

The sensitivity of *E. coli*, during the last 3 years, has remained fairly constant, except to aureomycin; here it shows an appreciable decrease. Chloromycetin appears to be the antibiotic of choice.

The proteus strains show a higher degree of sensitivity to chloromycetin and streptomycin than to aureomycin and terramycin. Novobiocin is also effective.

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VAN DIE REDAKSIE : EDITORIAL

DIABETIESE ANGIOPATIE

Tot betreklik onlangs is die bloedvaatveranderinge in diabetes mellitus aan arteriosklerose toegeskryf. Gedurende die laaste paar jaar word die bloedvaatveranderinge al hoe meer as 'n spesifieke kenmerk van diabetes mellitus beskou.[1] Die beskouing is dat dit 'n wydverspreide degeneratiewe aantasting van die kleiner bloedvate is.

Die retina bied die geleentheid vir direkte waarneming van die bloedvate voordat daar enige veranderinge in oogfunksie teenwoordig is. Jaeger (1856)[2] was die eerste om diabetiese retinopatie te beskryf. In die veertiger jare van die eeu volg die uitstaande werke van Ballantyne en Loewenstein.[3-6] Hulle beskrywings vorm die grondslag van ons huidige kennis in verband met die fundusveranderinge, veral met betrekking tot die belangrike mikroaneurismas, 'n vergete waarneming van Stephen McKenzie (1877)[7]. Die werkers kon aantoon dat van die klein puntvormige bloedings in werklikheid mikroaneurismas is. Ashton[8] kon die bevindings histologies bevestig, terwyl Friedenwald[9] kon beklemtoon dat die haarvaataneurismas direk van die bloedvaatwand ontstaan, en nie 'n endotelisering van 'n bloeding is nie.

Die mikroaneurismas is klein en reëlmatig met 'n deursnit van 20 tot 80 mikron en word meestal in die gebeid van die macula, veral tussen die vertakkings van die boonste en onderste temporale vate in die diepere haarvaatlae van die retina aangetref. Alhoewel die mikroaneurismas al in verskeie ander toestande, onder andere pernisieuse anemie,[10] maligne hipertensie,[11] afsluiting van die sentrale[12] retinale vena en in normale retinas[13] al aangetref is, kom dit so min voor dat dit prakties gesproke as eie aan diabetes mellitus beskou kan word.

Reeds baie lankal is diabetiese pasiënte met wisselende grade van albuminurie, nefrotiese edeem, hipertensie, en renale ontoereikendheid bekend. Vroeër is sulke gevalle as diabetici met 'n bykomstige bloedvaatsiekte beskou. In 1936 kon Kimmelstiel en Wilson[14] aantoon dat 'n groot aantal, maar seer seker nie al sulke gevalle, aan 'n spesifieke degeneratiewe komplikasie van diabetes mellitus ly. Die veranderinge is deur hulle interkapillêre glomerulus-sklerose genoem aangesien die letsels deur ronde of diffuse hialinemassas wat tussen die haarvate lê, gekenmerk is. Verskeie werkers[15] beweer egter dat die letsels nie inter- maar wel intrakapillêr in oorsprong is. Die diffuse vorm is nie eie aan diabetes mellitus nie, aangesien dit ook in glomerulonefritis,[16] nefrosklerose en in kroniese piëlonefritis aangetref mag word. Die nodulêre vorm kom egter so min[17] in ander toestande voor, dat dit as eie aan diabetes mellitus beskou mag word. Die hoë gesamentlike voorkoms van diabetiese retinopatie en interkapillêre glomerulussklerose is klinies en patologies deur verskeie werkers[1] gemerk. Met die McManus-kleurtegniek,[18] wat feitlik spesifiek vir polisakkarides of glukoproteïenes is, word die hialien van die glomerulus-haarvate, sowel as die verdikte wande van sommige van die retinale mikroaneurismas, sterk gekleur. Die gelyksoortige veranderinge in die haarvate kon dui op 'n gesamentlike oorsprong. Die vraag het toe ontstaan of die letsels in die haarvate nie op ander plekke in die liggaam aangetref mag word nie.

In die beoordeling oor die voorkoms van gangreen, retinopatie en neuropatie onder diabetici met afsluitende perifêre bloedvaataantasting, maak Dry[19] en Hines (1941) die afleiding dat daar 'n gemeenskaplike faktor vir die ontstaan van aterosklerose in die teenwoordigheid van diabetes mellitus aan die een kant, en vir die ontstaan van diabetiese retinopatie en neuropatie aan die anderkant, is. Die gemeenskaplike faktor sou die versteuring van die voedende vate wees: In retinopatie die retinale arterioli; in neuropatie die vasa nervorum; in intimale aterosklerose die vasa vasorum. Woltman en Wilder[20] vind opmerklike verdikking van die intraneurale vate in gevalle met diabetiese neuropatie. In 'n mikropletismografiese ondersoek na die volle vaatverwyde toestand in diabetici onder die ouderdom van 45 jaar sonder bewys van perifêre aterosklerose, vind Megibow[21] en medewerkers in een derde van die gevalle verminderde bloedvloei na die tone. Die werkers stel voor dat die aantasting in die digitale bloedvaatbed geleë is, en dat die aard van die letsels dieselfde as dié in diabetiese retinopatie en glomerulussklerose is. Handelsman,[22] deur middel van huidhittegraadbepalings, en Mendlowitz,[23] met 'n kalorimetriese metode, vind ook 'n verminderde bloedvloei na die tone in diabetici sonder tekens van perifêre aterosklerose. Sigroth[24] vind in 'n groep van 91 diabetici sonder simptome of tekens van bloedvaataantasting in die boonste ledemate, na refleks vaatverwyding, tekens van verminderde bloedvloei in 53, aangedui deur verminderde huidhittegraadstyging in die vingers. Die werkers skryf die bevindings deels aan 'n vermeerderde vasomotoriese tonus en deels aan 'n infiltrasie van die wande van die kleiner bloedvate, toe. Die werkers kon ook 'n statistiese verwantskap tussen die voorkoms van perifêre bloedvaatafwykings, retinopatie en nefropatie toon.

Uitstaande werk in dié verband is ook deur Ditzel en medewerkers deur middel van die stereoskopiese dissekterende mikroskoop gedoen. Nie alleen kon hulle 'n verandering in die bloedsvloei[25] in die terminale bloedvaatjies van diabetici aantoon nie, maar ook vernouing van die arterioli, verwyding van die venules en veral in ouer pasiënte[26] hialine infiltrasies in die wande van die terminale bloedvaatjies. Die bevindings is ook aangetref in sommige[27] van die oënskynlike gesonde kinders van diabetiese moeders.

Wat die onderliggende oorsaak vir die unieke vaatletsels is, is tot hede toe nog nie bekend nie, maar wat wel blyk, is

dat in diabetes mellitus 'n spesifieke bloedvaataantasting wydverspreid aangetref word.

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THE AQUEOUS HUMOUR

Much has been written about the aqueous humour and there are numerous reports on the many aspects of the mechanism of the formation and circulation of this fluid, the hydrodynamics of the eye, and the effect of pharmacological agents on intra-ocular pressure.[1,2]

There is general agreement on the relative importance of capillary-filtration pressure and secretory activity in the ciliary processes; the former is believed to be of minor importance in the formation of aqueous humour, whereas the secretory activity is regarded as essential to the maintenance of the normal flow through the eye. Such knowledge is based on quantitative studies on the transfer of compounds from the blood to the aqueous humour. Thus, the passage of solutes and water from the blood depends mainly on the permeability of the capillary endothelium, so that, in the case of sodium, the capillary wall has been found experimentally to be the main barrier to the inward passage of this ion. The concentration of glucose in the aqueous humour is about 20% lower than that in the arterial plasma; this may be due to some restriction in the passage of the monosaccharide into the eye, but is mainly due to its rapid utilization by the intra-ocular tissues. Ascorbic acid is believed to be actively transported across the cells of the ciliary processes, and, in many species, it is found in higher concentration in the aqueous humour than in the plasma.

Research remains to be done on the entrance and turnover rates of ions in the aqueous humour, for our knowledge is poor concerning the mechanisms by which monovalent electrolytes cross the barrier between the blood and the aqueous humour. The movement of ions involves the blood, the posterior chamber and the anterior chamber. The loss of ions into the vitreous humour, the lens and the cornea has also to be considered. The whole process of transfer of ions has been difficult to elucidate.

The methods used to assess the rate of flow of the aqueous humour do not appear to have been accurate; direct cannulation, for example, is unphysiological yet the results obtained have been little different from those obtained in studies made under physiological conditions. The rate of aqueous flow has been calculated to be 2 microlitres per minute, and this can be altered in many ways; an increase in the intra-ocular pressure can cause a compensatory decrease in the rate of formation of the aqueous humour. Acetazolamide (diamox) reduces the rate of formation of aqueous humour and lowers intra-ocular pressure in both normal and glaucomatous eyes. This drug appears to act (as an inhibitor of carbonic anhydrase) directly on a secretory mechanism in the cells of the ciliary processes, but it does not entirely abolish secretory activity; a great deal of research has been done to determine the mechanism of the action of acetazolamide, but no final interpretation has yet been reached. A last point in this reference to the formation of aqueous humour is the question of osmotic pressure. That of the fluid has been accepted as being 1-2% greater than that of the blood; but there is doubt about the accuracy of this result and it would now appear that the aqueous humour is in osmotic equilibrium with the blood.

The outflow of aqueous humour from the anterior chamber into the canal of Schlemm takes place through a trabecular meshwork of collagen and elastic fibrils, a transparent membrane, and a layer of endothelial cells, nerve fibres and nerve endings; the function of this meshwork is slowly being elucidated. The enzyme hyaluronidase is believed to operate in this area, decreasing resistance to outflow through the meshwork. However, other research indicates that the principal resistance to drainage of fluid from the eye is in the outflow vessels of the sclera.

The present state of knowledge concerning the formation, circulation and drainage of the aqueous humour has been described in a few monographs and reviews, the most recent being that of Langham,[1] who has contributed much in this field.

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The Annual Conference of the (British) National Association for Maternal and Child Welfare will be held at Church House, Westminister, London, on 21-23 July 1959. Subjects under discussion will include: The effect of maternal and child welfare work on problems of population; The basic principles of health education; An evaluation of routine medical inspection of pre-school and schoolchildren, etc. Speakers, delegates and visitors from overseas as well as from the UK are expected. The conference fee will be £2 12s. 6d., which includes a copy of the full report. Further details may be obtained from the Secretary, N.A.M.C.W., Tavistock House North, Tavistock Square, London, W.C. 1.

INJURIES OF THE URETHRA: WITH SPECIAL REFERENCE TO THOSE OCCURRING IN FRACTURES OF THE PELVIS*

C. D. KISNER, M.B., CH.B., CH.M. (RAND),

Part-time Head of Urological Unit, Baragwanath and Coronation Hospitals, Johannesburg

Modern high-speed travel and intensive industrialization have been accompanied by a considerable increase in injuries of the pelvis. The frequency of urological complications has risen in proportion.[1] Forty years ago only 4% of vehicular accidents resulted in pelvic fracture,[2] whereas 24 years ago it was 35%. In 1947 it had reached the high figure of 75%.[2] On the other hand the case mortality decreased from 78% in 1907 to 23% in 1942.

Injuries to the urethra may arise from many causes, some bizarre, others trivial, and many in association with severe multiple injuries. Tribal circumcision, disappearing rapidly, is occasionally the cause of meatal stricture and periurethritis of the distal urethra, The accidental introduction of caustic chemicals into the urethra causes urethral strictures which may involve the whole length of the urethra. Injuries from missiles or other penetrating injuries, commoner in war than in peace, are occasionally seen. Children may impale themselves on broken bottles or on any projection.

Commoner and often grossly destructive is the bizarre type of accident which may occur in any walk of life. Total emasculation may result when a man is caught in machinery at the level of the pelvis. Reconstructive procedures in these cases tax the ingenuity of both plastic and urologic surgeon.

In the African 12 cases of severe urethral bleeding have been observed, all presenting with a similar syndrome, which has apparently not been reported previously. This consists of a fusiform swelling around the urethra 2 inches from the external meatus with a history of recent intercourse. Urethroscopy reveals a tear in the region of this fusiform swelling which bleeds profusely, requiring fulguration, after which a catheter is left indwelling for 3—5 days. Over-enthusiasm appears to be the cause of the tear in the urethra but it is uncertain whether a pre-existent stricture is present. This is unlikely, for the urethroscope passes easily.

A recent series of unusual cases of urethral injury at Baragwanath Hospital, Johannesburg, includes the following: Urethral tears 12, tribal circumcision 4, emasculation 3, chemical caustics 2, penetrating wound 1 (2 years old).

Trauma from endoscopic and other instrumental procedures may lead to stricture. In endoscopic prostatic surgery the resectoscope is said to move 800 times in the urethra, and 150 times if the Thomson punch is used.[4, 5] If large-calibre instruments are to be used posterior urethrostomy has been recommended[6] in order to reduce the incidence of stricture formation.

Gentleness is essential during catheterization or urethral sounding. Large-calibre catheters, if retained for a few days, will cause necrosis of the urethral mucosa, resulting in infection and stricture. In paraplegic patients, particularly, catheters larger than 16 or 18 F. are to be condemned.

Injuries to the perineum, such as falls astride, kicks or blows, constitute a common source or urethral trauma involving the bulbous and less frequently the penile urethra. Ruptures of the membranous and prostatic urethra are invariably due to fractures of the pelvis. At the Baragwanath and Coronation (non-European) Hospitals, Johannesburg, ruptured urethra was present in 55 (12·4%) of 442 cases of fractured pelvis (Table I). Other authors have given figures of 7·3%,[1] 17%,[8] and a range of 7% to 40%.[3] One series is reported[7] of 32 cases of rupture of the prostatic and membranous urethra all due to pelvic fracture.

TABLE I. BARAGWANATH AND CORONATION (NON-EUROPEAN) HOSPITALS

	Baragwanath 6 years 1951-56	*Coronation 5 years 1952-56*	*Both hospitals*
Falls astride, kicks, blows, etc.			
Partial ruptured urethra	26	8	34
Complete ruptured urethra	4	7	11
Total	30	15	45
Fractured pelvis	408	34	442
Complete ruptured urethra	38	7	45
Partial ruptured urethra	7	1	8
Degree not stated	2	—	2
Total	47	8	55*
Ruptured bladder	21	3	24†
Ruptured bladder and urethra	13	2	15‡
Ruptured urethra and rectum	1	1	2
Ruptured urethra, bladder and diaphragm	—	1	1
Ruptured urethra and multiple tears of colon	—	1	1
Urethral stricture			
Total cases admitted for treatment (same period)			354
Reconstructive procedures (urological departments only)			
Penile urethra (anterior and bulbous):			
Johansen and Denis-Browne (1955-56)			13
Resection anastomosis (1951-54)			17
Posterior urethra (prostatic and membranous):			
Excision of fibrous tissue, indwelling catheter (1951-51)			5
Johansen serotal inversion (1955-56)			2
Badenoch pull-through (1955-56)			2
			29

* (12·4%)
† (5·4%) } 21·3%.
‡ (3·4%)

SIGNS AND SYMPTOMS

The signs and symptoms of urethral trauma are constant and require no repetition. However, a few points may be mentioned. The history of the injury is often indicative of the nature of the injury but in unconscious patients other evidence must be sought. Bleeding from the external meatus, associated with injury, is pathognomonic of urethral trauma. Perineal haematoma occurs in most cases of injury but may be absent if the cavernous tissue of the urethra is disrupted and its outer coats left intact.

The ability to void urine indicates a partial rupture but this sign is not infallible.[9] A catheter, passed in order to determine whether the rupture is partial or complete, may fail to pass, and its removal will be followed by further bleeding, indicating that the cavernous tissue has been torn. Failure to pass a catheter does not necessarily indicate that the rupture is complete; after evacuation of the haematoma which compresses the urethra, it may then be found possible to pass a catheter into the bladder.[10]

Extravasation of urine in ruptured urethras occurs as a late sign, whereas with intra- or extra-peritoneal rupture of the bladder it is invariably present throughout. In intra-peritoneal injuries unless extravasation is specially looked for

* A paper presented at the South African Medical Congress, Durban, September 1957.

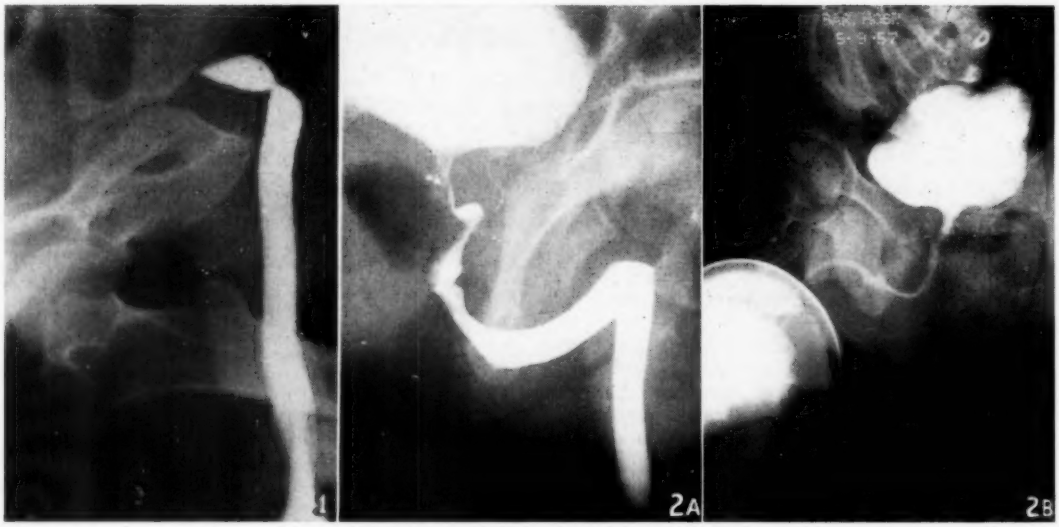

Fig. 1. Urethral stricture which has occurred 2 months after partial rupture of urethra.
Fig. 2a. Typical prostato-membranous stricture 8 months after pelvic fracture.
Fig. 2b. Successful repair of prostato-membranous stricture by Badenoch pull-through operation.

the signs may be masked and the resultant delay in surgery may be disastrous.[11]

When injury occurs at the apex of the prostate (usually in fractures of the pelvis) the pubo-prostatic ligaments are torn and the prostate and bladder become displaced. This displacement may be confirmed on rectal palpation.

When skeletal and visceral injuries are multiple, radiological assistance is essential to disclose their extent. In exploring injury to the urethra urethrography and cystography give valuable information, particularly if some doubt exists. The use of 35% diodone or similar preparation has not been observed to cause any ill effects.

TREATMENT

In 1913 Rutherford Morrison wrote: 'Rupture of the urethra is one of the most serious of accidents and unless your skill can prevent the development of a stricture you are presiding at the opening of a lifelong tragedy.'[7] With this in mind treatment of these cases must be immediate, but may be postponed for a few hours if resuscitation is necessary. The standard treatment[7] consists of (1) deviation of urine from the traumatized area, (2) reconstruction of the urethra at operation, and (3) maintenance of the urethral channel during healing and in later life.

The numerous publications in the literature bear testimony to the diverse methods used in dealing with the ruptured urethra. The still greater number on reconstruction of the urethra indicate that the surgery of urethral trauma leaves much to be desired. Rowlands[9] summarizes the procedures in vogue and discusses 4 methods:

Method 1 consists of suprapubic cystostomy only, leaving the urethra untouched.[1, 12] Elective surgery is undertaken 1-2 months later, when the chances of primary union are better. In my opinion this method will find application in cases of severe shock and multiple injury where only the shortest procedure possible can be undertaken.

In *Method* 2, perineal incision is made without cystostomy. The urethra is repaired over an indwelling catheter, which is left in for a week or more. Leakage may occur and it may not be possible to introduce the catheter into the bladder (Fig. 1).

In *Method* 3, cystostomy is performed and a catheter is railroaded into the bladder after using interlocking sounds. The perineal haematoma is left intact. Infection is likely to occur in the haematoma which, if not evacuated, causes fibrosis and later contraction.

Method 4 is considered by Rowlands[9] to be the method of choice and is the method used almost exclusively in this series for *ruptures of the anterior urethra*. In partial ruptures, however, where a catheter is easily passed into the bladder it is left in for 7-10 days. Stricture formation may occur and regular dilatation is essential. For complete ruptures of the anterior urethra, the patient is placed in the lithotomy position and suprapubic cystostomy is carried out. The perineum is then incised and the haematoma evacuated. The two ends of the urethra are identified by sounds or catheters introduced from the urethral meatus and bladder. If the urethra is not split or severely lacerated the roof is sutured, although Trafford[7] holds that this is not necessary. The perineal wound is lightly packed or sutured in layers with a soft rubber drain *in situ*. The catheter is removed in 2 weeks and immediately a soft rubber catheter is passed. This is repeated every 2-3 days for about 10 days, then at weekly intervals for a month, thereafter at increasing intervals. The advantages of this technique is that perineal section allows evacuation of the haematoma, which reduces subsequent fibrosis and contraction. Direct suture of the urethra is made possible and deviation of urine *via* the suprapubic cystostomy prevents leakage and infection. In our cases it has not been necessary to use a guiding silk suture for later catheterization, as advocated by Harrison.[13]

Ruptures of the membranous and prostatic urethra following

pelvic fracture require the most exacting surgery in order to prevent post-operative stricture formation (Fig. 2*a*). Reconstructive surgery in this important short reach of the urethra is technically more difficult than that of the anterior and bulbous urethra.

Disruption of the pelvic girdle by lateral or antero-posterior compression of the pelvis in crush injuries results in extensive tearing of the membranous urethra, triangular ligament or prostatic urethra. The injuries which result vary in individual cases and are also dependent on the type of pelvic fracture. Occasionally the triangular ligament is pulled off its attachment to the inferior ramus of the pubis, leaving the urethra intact, or the defect in the urethra may be partial and laterally situated. Where the prostatic urethra is severed —and there is usually excessive damage to the triangular ligament in these prostato-membranous injuries—simple railroading of a Foley catheter is, in my experience, insufficient. In spite of traction on the catheter, a large gap between the severed ends persists and becomes converted into a resistant, dense, fibrous stricture (Fig. 2a).

For this reason in the past 6 years I have utilized a perineal traction suture, hitherto not described. After cystostomy, evacuation of clots, and control of haemorrhage both bony and vascular, a Foley catheter is railroaded through the severed urethra in the usual manner. Incidentally, in these injuries a finger in the prostatic urethra is usually more efficient in guiding this onto the distal exploring sound. A double chromic catgut suture on a large curved needle is introduced from the perineum, lateral to the urethra, through the triangular ligament to emerge in the retropubic space. Substituting a small Mayo needle, a firm bite of the anterior prostatic capsule is taken. Using the large needle once more, the double suture is taken through the triangular ligament on the other side to emerge in the perineum (Fig. 3). Traction on this suture pulls the prostate in the direction of the catheter, until it abuts on the membranous urethra in the triangular ligament. The ends of the suture are tied over rolls of guaze or rubber on each side of the perineum to maintain the prostate in this position.

Fig. 4. Voiding cysto-urethrogram 4 weeks after repair of prostato-membranous urethral rupture utilizing special traction suture.

Multiple Injuries

Where multiple injuries have occurred it is wise to perform laparotomy to exclude and deal with any visceral injuries. In one case a severe traumatic diaphragmatic hernia was found, requiring thoracotomy for its reduction.

Recto-urethral injuries require debridement and careful resuture. It is probably wiser to do a colostomy so that healing shall be by primary intention, and in order to prevent urinary infection and fistula formation.

Where orthopaedic assistance is not available the fractured pelvis should be manipulated under anaesthesia. If the patient's condition is satisfactory, manipulation with the abdominal wound open has its advantages in making it easier to assess whether the displacement has been reduced. Thereafter a pelvic sling is of great value, combined with leg traction if the displacement is great.

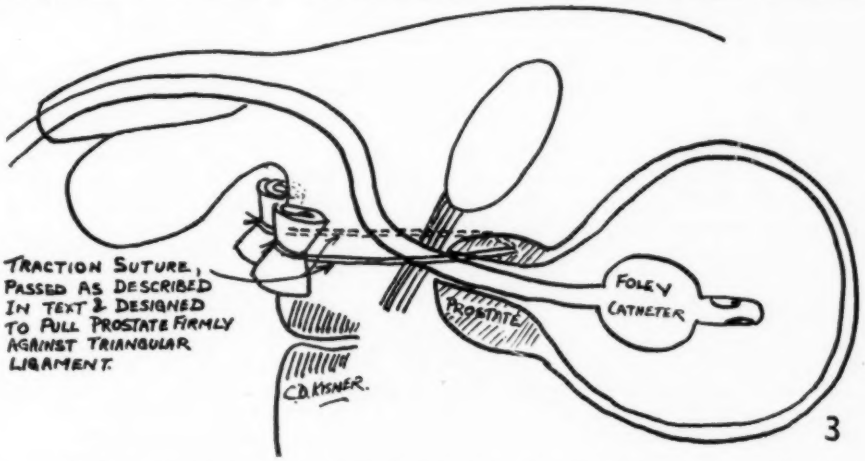
TRACTION SUTURE, PASSED AS DESCRIBED IN TEXT & DESIGNED TO PULL PROSTATE FIRMLY AGAINST TRIANGULAR LIGAMENT.
FOLEY CATHETER
PROSTATE
C.D. KISNER.
3

Fig. 3. Demonstrates perineal traction suture for use in cases of rupture of prostato-membranous urethra, generally associated with pelvic fracture.

This suture has reduced post-operative stricture formation at the prostato-membranous junction (Fig. 4). Moreover, it has materially assisted in facilitating post-operative bouginage. It is felt that, should surgery for membranous strictures be required, the prostate has at least been fixed close to the triangula ligament and reconstructive procedures will be made easier. Atherton[14] has recently used a similar tension suture in reconstruction of the bladder neck after radical prostatectomy.

Post-operative Complications

These complications have been thoroughly investigated by Trafford.[7] Few complications were found in relation to disturbances of micturition, urinary infection, rise in blood urea and changes in intravenous pyelography. As regards

sexual function, although impotence does occur, he found that it was less frequent than expected. Of 32 cases with urethral injury and fractured pelvis, 50% were fertile. Normal libido was present in 16 cases and diminished in 6 cases; 3 cases were impotent. Loss of libido and impotence may be due to injury of the nervi erigentes or blood vessels, or thrombosis of the dorsal and deep arteries of the penis.

Although Trafford found only 4 cases of true stricture, most authors consider this to be the important post-operative disability. The numerous publications on this matter stress the need for careful surgery and regular bouginage in order to prevent its occurrence.

Traumatic Strictures of the Urethra

(*a*) *Anterior Strictures* (penile and bulbous urethra) may follow severe or trivial injury and are usually well formed within a year of injury. This period, however, may be prolonged and the condition may remain latent. Prolonged after-care is therefore necessary for all patients who have suffered urethral injury.[15]

Where intermittent dilatation fails, reconstructive procedures are adopted. Attwater[16] maintains that after external urethrotomy the stricture re-forms. Internal urethrotomy is of doutful value for the same reason. Excision of narrow strictures and re-anastomosis has been found excellent. As much as 6 cm.[17] or 8 cm.[10] may be excised. Indwelling catheters should not be used and the urine should be deviated by cystostomy or urethrostomy.

Modern reconstructive surgery relies on the behaviour of buried strips of skin, following experimental work that has been reported.[18-21] The practical manifestations of this procedure became evident in Dennis Brown's operation for hypospadias.[22] Swinney [23] utilized this technique for dealing with strictures associated with fistulae and periurethritis. Both Stewart[24] and Johanson[25] employed similar procedures for long anterior strictures. Bonnin[26] and Culp[27] have recently reported their experiences with this procedure, which is both simple and practical, requiring minimal hospitalization.

(*b*) *Posterior Strictures* (membranous and prostatic urethra). With these strictures, because of their strategic position, reconstruction presents greater difficulties. Excision of the stricture with indwelling catheter leads to re-formation of the stricture in much the same way as internal urethrotomy does. The mobility of the isolated penile urethra enabled Badenoch[28] to use this as a method in reconstructing the posterior urethra (Fig. 2 *b*). This entailed suprapubic cystostomy and perineal exposure to isolate the urethra. The dense scar tissue of the stricture is then excised. A catheter is passed through the bladder neck and prostatic urethra, to emerge in the perineal wound. The distal severed end of the urethra is sutured to the catheter, which is then pulled back into the bladder until the end of the urethra is level with the internal meatus. Tension is maintained by a forceps placed on the catheter at skin level after closure. I have found it useful to suture the outer coats of the corpora cavernosa in the perineum in order to reduce tension on the proximal short length of urethra passing across the excised strictured area.

Modern concepts of urethral reconstruction have, to a certain extent, allayed the pessimism of Rutherford Morrison's pronouncement (see above). Perhaps the old adage 'Once a stricture always a stricture' may also be deleted. Nevertheless delay in diagnosis, ineffectual management and misjudged surgery will continue to play their parts in imposing a lifelong toll of pain and suffering.

SUMMARY

The various causal factors relating to urethral trauma are discussed. Prominent amongst these are local injury to the perineum and association with pelvic fractures. A new syndrome of urethral bleeding in the African is mentioned. Diagnostic features are commented upon. Attention is focused on the fact that, in multiple injuries, trauma to the lower urinary tract may be masked. All diagnostic aids should be invoked to facilitate early diagnosis, and surgery should be undertaken as soon as possible after resuscitation.

The treatment of injuries of the anterior and posterior urethra is discussed and the method of choice evaluated. In injuries of the prostatic and membranous urethra a new suture is described which is of assistance in reducing stricture formation at this site.

The complications of urethral trauma are commented upon. Most important of these is stricture, and the various methods of reconstruction of the anterior and posterior urethra are outlined.

I wish to thank the Superintendents of the Johannesburg General Hospital, Baragwanath Hospital and Coronation Hospital for permission to publish. The radiology departments of these hospitals have been most helpful in regard to urethrography. I am greatly indebted to Drs. R. Rautenbach and S. Kimmel for assistance with the photography and to Mr. H. Fine for his aid and interest.

ADDENDUM

Since this article was submitted for publication Badenoch pull-through operations have been done on 4 more cases with uniformly satisfactory results. The Johanson procedure has proved simple and practical in 22 further cases.

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'*Sites of erythrocyte destruction in haemolytic anaemias*.' A talk on this subject will be given by Dr. S. M. Lewis, of the Department of Haematology, British Postgraduate Medical School, London, in the large A-floor lecture theatre, Groote Schuur Hospital, Cape Town, on Tuesday 18 November at 12 noon. All interested are invited to attend.

PULMONARY TUBERCULOSIS IN THE URBAN BANTU: A PILOT STUDY OF 115 CASES

D. L. OVEDOFF, M.B., B.CH., M.R.C.P., *Physician, East Rand Chest Hospitals*, and PAUL SNEIDER, M.B., B.CH.,* *Tuberculosis Medical Officer, Johannesburg*

Current forms of therapy for pulmonary tuberculosis have led to great changes in the handling of this disease.[1,2] With the desperate shortage of hospital beds available for non-Europeans, and the ever-increasing numbers of patients suffering from the disease, it is now becoming customary to hospitalize patients for as short a period as possible, and then to return them to their local authorities for domiciliary management.[3-4] With this in mind, we undertook the study of a small group of adult non-European patients from the time they entered the hospital up to the time of their subsequent management as outpatients.

METHOD

For purposes of this pilot study, approximately 100 random cases were chosen from one local authority (Johannesburg). Hospital treatment was undertaken in tuberculosis hospitals near Johannesburg by one of us (D.L.O.). These hospitals were Rose Chest, Knights Chest, and East Rand Chest Hospitals; and SANTA centre at Modder Bee. After discharge from hospital, the patients were referred back to the Johannesburg municipal tuberculosis clinics, where one of us (P.S.) was in charge of their treatment. These clinics are situated in all the non-European municipal townships of Johannesburg.

On admission to hospital, patients were classified into groups determined by the severity of their X-ray appearances. A modified N.A.P.T. classification was used. X-rays were assessed by us conjointly, together with other staff members of the hospitals concerned. Presence or absence of tubercle bacilli in the sputum was recorded in all cases (direct examination). Sputa were only regarded as negative, if 3 consecutive 24-hour specimens were free of tubercle bacilli. A similar assessment was made on discharge from hospital. On presenting himself at the clinic, the patient was similarly classified.

The basic hospital treatment was streptomycin, 1 g. daily for 3 weeks and then 1 g. 3 times weekly. The dose of isonicotinic acid hydrazide (INAH) was 8 mg. per kg. of body weight daily. Other forms of therapy were also used when necessary. In some cases, streptomycin was replaced by para-amino salicylic acid (PAS), 15-20 g. per day. At the clinic we attempted to use mainly PAS and INAH because many of the patients were at work, and it was difficult for them to return for repeated injections. Routine domiciliary visits to clinic patients were carried out by Johannesburg municipal tuberculosis medical officers.

Radiological Classification

The patients were classified according to the radiological findings in their respective cases as follows: Grade 0=no demonstrable disease; Grade 1=minimal localized (unilateral) infiltration; Grade 2=bilateral infiltration with no cavities, or unilateral infiltration localized to a single lobe with a cavity not exceeding a diameter of 1 cm.; Grade 3=bilateral disease affecting at least 3 lobes with cavitation; Grade 4=gross widespread bilateral cavitating disease.

Age and Sex Distribution

As can be seen from the diagram in Fig. 1, we encountered mostly males between the ages of 20 and 50 years. This reflects a typical labouring community existing in industrialized urban areas.

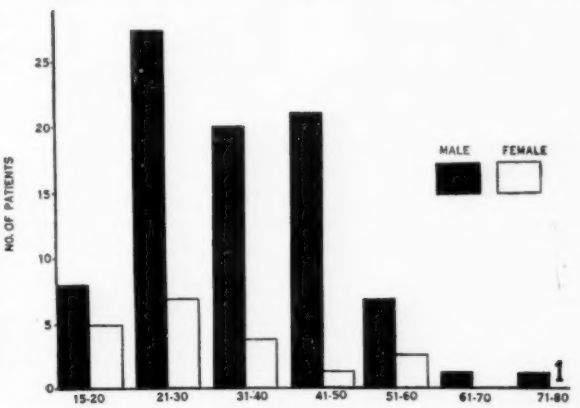

Fig. 1. Analysis of 105 cases showing age and sex distribution. (Ages of 6 males and 4 females not obtained.)

RESULTS

1. *Duration of Stay in Hospital*

An analysis of the 115 cases according to the duration of their stay in hospital, which ranged from 0 to 20 months, with an average of 6·6 months, is illustrated in Fig. 2.

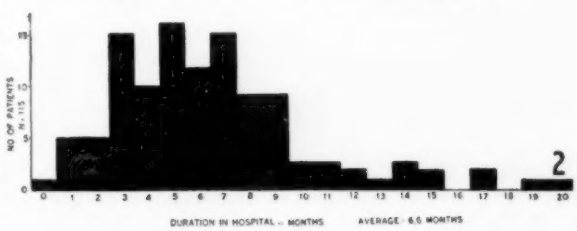

Fig. 2. Analysis of 115 cases showing duration of stay in hospital (months).

2. *Course in Hospital*

Most of the cases were classified, according to the severity of their condition, in groups 2 and 3 (Fig. 3). The percentage of cases with positive sputum increased with the severity of the disease. Fig. 3 also illustrates how the patients progressed during their stay in hospital. On discharge, 100% of group 1 cases, 97·8% of group 2 cases and 77·5% of cases in groups

* Now postgraduate assistant, radiodiagnostic department, General Hospital, Johannesburg.

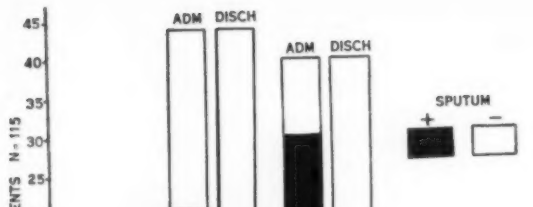

Fig. 3. Analysis of 115 cases showing classification according to grade of disease and result of sputum examination on admission to hospital and on discharge.

3 and 4 showed negative results on examination of their sputa.

3. *Discharge from Hospital*

We felt that this was, perhaps, the most critical period in the management of a patient suffering from pulmonary tuberculosis. On discharge from hospital all cases with details of their hospital stay, were referred to their respective local authority health departments. Thus every Johannesburg patient was told to report immediately to the tuberculosis clinic in his area, because he was not yet cured, and further therapy would be necessary.

Of the total of 115 cases who left hospital, only 76 reappeared at the clinic; 39 cases (33·8%) were therefore 'lost'. In order to explain why this should have happened, we analysed all the details pertaining to these cases.

Irregular Discharges. Hospital discharges were divided into 2 types: normal and 'irregular'. There were 22 (25·4%) 'irregular' discharges; 16 left hospital on their own initiative, and there were 6 'disciplinary' discharges; the latter was only resorted to in cases of extreme misbehaviour. Of the 22 cases, 11 were thought to have improved clinically at the time they left hospital; 7 were unchanged and 4 had become worse. Their stay in hospital ranged between 1 and 20 months, with an average of 7 months. (Note the similarity to the average duration of stay in hospital of the whole group.)

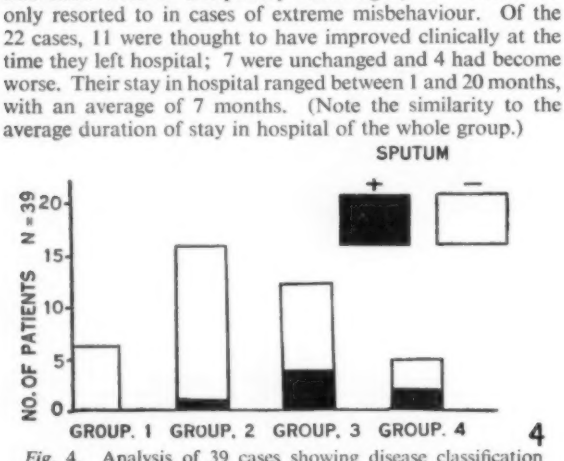

Fig. 4. Analysis of 39 cases showing disease classification and sputum results of discharged hospital cases who failed to report to clinic.

Of these 22 cases, 10 presented themselves at the clinic for further treatment, but 12 (54·5%) were never seen again. Of the 10 cases who attended the clinic regularly, 2 broke down and were readmitted to hospital, and 2 were found to be psychotics and were dealt with accordingly. (It is sad to note that both of these cases were 'disciplinary' discharges).

Fig. 4 shows the severity of the cases who failed to return to the clinic, together with their sputa results. There were 7 who had positive sputa. Of these 7 cases, only 2 were discharged regularly.

4. *Course at the Clinic*

Table 1 shows the number of cases and their classification

TABLE I. CLINICAL CLASSIFICATION OF PATIENTS AT CLINIC COMPARED WITH THEIR STATE IN HOSPITAL

		Clinic Grades					
		0	1	2	3	4	
Hospital Grades	0	0	0	0	0	0	0
	1	5	3	0	0	0	8
	2	8	14	4	1	0	27
	3	0	14	9	5	0	28
	4	1	0	4	2	1	8
		14	31	17	8	1	Total
		Total					

into groups as seen at the clinic: it also shows the clinical state of the patients on discharge from hospital. These figures show that 80% (±12%) of the cases improved in health under clinic supervision. An analysis of the sputa results of the patients attending clinic is illustrated in Fig. 5. Unfortunately there were 16 cases (22·5%) whose sputa results were not recorded. This is due to the repeated failure of the patients to return sputum bottles. There were, therefore, 10 cases with positive sputum.

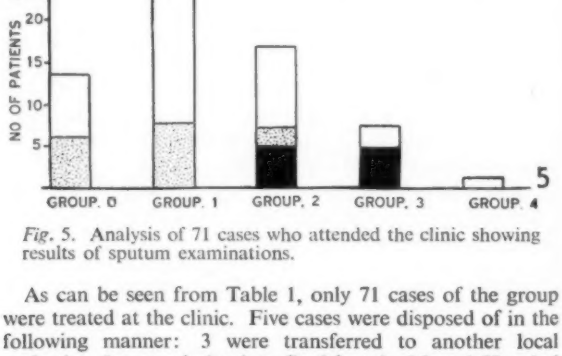

Fig. 5. Analysis of 71 cases who attended the clinic showing results of sputum examinations.

As can be seen from Table 1, only 71 cases of the group were treated at the clinic. Five cases were disposed of in the following manner: 3 were transferred to another local authority, 1 was admitted to Sterkfontein Mental Hospital and 1 was erroneously discharged. This case was thought not

to have had tuberculosis in hospital, but on re-examination his sputum was found positive. There were, in addition, the 39 cases mentioned above who failed to return to the clinic. Of our group of 71 cases 20 were observed at the clinic for 6 months, 49 for 7-12 months and 2 for 13-24 months.

5. Clinical State of Out-patients

At the time of writing, 57 cases were in good health and were working. One case was chronically ill. Twelve cases had complications (1 had chronic congestive cardiac failure, 7 were pulmonary cripples, 1 had peripheral neuritis, and 3 were alcoholics). There was 1 death (cause of death not ascertained).

Five cases retrogressed during this period, and had to be readmitted to hospital. Of these, 4 had positive sputa (2 of these had previously left hospital without permission).

As noted above (Fig. 5), of this group, there were 10 patients with positive sputum. Of these, 3 were in reasonable health, 3 were chronically ill, and there were 4 cases of breakdown who were readmitted to hospital.

The therapy used at the clinic was as follows: PAS and INAH: 35 patients. Streptomycin and INAH: 23 patients. Other combinations: 13 patients.

DISCUSSION

The striking feature of this study was the very large proportion of patients who failed to report to the clinic after discharge from hospital. Among this group was a significant number of patients with positive sputum, and they were thus free to spread infection. In general, chronic infective cases are now increasing, and there should be a campaign against promiscuous spitting.[1,5] There are many reasons for this failure to continue treatment. Some patients think that when they have left hospital, they are cured. This could well be obviated by better education.[2,6] Many patients are illiterate and belong to the labouring class. Very little attention is paid to this highly important aspect of the patient's management. We feel that education of a tuberculotic patient should, perhaps, play as great a part in his treatment as his chemotherapy. It is often difficult to get a patient to appreciate the fact that he is suffering from a chronic disease which will have to be watched for an indefinite period. When dealing with an under-educated portion of the population it cannot be too strongly stressed how important it is that the patient should fully understand the implications of his disease.

There are other causes too for this break in the chain of treatment. Patients falling in this category change their addresses very frequently, and are often untraceable. They often even change their identities. One of the most serious difficulties encountered is that tuberculosis often affects the chief breadwinner of a family. Social relief is inadequate at present, and the patient cannot face with equanimity the prospect of a starving family.[3] When an African has to go off ill for more than a week, he almost certainly loses his job, and the urgent necessity to return to work often compels the patient to cut short his treatment and to avoid detection by all possible means. The process of rehabilitation is laborious and the arrested tuberculotic patient usually has many months to wait before he is re-employed.

Another reason for the large number of patients who failed to report for out-patient therapy is the inadequate liaison between hospital and local authority. It is usually left for the patient to come to the clinic on his own initiative. We should like to make an urgent plea for better cooperation between tuberculosis hospitals and clinics. A uniform method of record keeping throughout the tuberculosis services, for example, would be of inestimable value.[2]

The number of irregular discharges, we feel, is much too high. Disciplinary discharges are only resorted to in extreme cases of alcoholism, in gross disobedience, or when patients create a disturbance and endanger the well-being of others. Many of the problems in these cases are of a socio-economic nature and beyond the scope and control of the medical authorities. The problem of the unmanageable patient in tuberculosis institutions however, is world wide, and is not easy to overcome in any social milieu.[1-3] A short hospital stay in conjunction with adequate subsequent out-patient management is probably the best form of treatment under present circumstances, and enables the best possible use to be made of the limited available hospital beds.[2-4,7]

The present series is too small a group on which to base valid statistical conclusions, and we should like to recommend that large-scale follow-up studies of this nature be made in all large centres. Only then shall we know the true value of our therapeutic programmes.

SUMMARY

1. 115 cases of pulmonary tuberculosis affecting non-Europeans in Johannesburg were studied from the time of their admission to hospital until their return to out-patient clinics. Their progress at the clinic was assessed.

2. Special mention is made of the large number of cases lost after discharge from hospital, and possible methods of remedy.

3. The value of short-term hospitalization, coupled with adequate subsequent out-patient supervision for these cases, is shown.

4. It is suggested that further large-scale studies of this nature should be made.

Our thanks are due to Dr. J. W. Scott Millar, Medical Officer of Health, Johannesburg, for his permission to use the records of cases, to Dr. S. W. Adler and Dr. P. B. Peacock, Medical Officers of Health of Benoni and Germiston respectively, for permission to use the hospital records, and to Mr. D. Crighton for his help in the statistical analysis of the results.

Note: Since the completion of this study, the Johannesburg city health department has initiated a compulsory mass miniature radiographic service at the municipal non-European affairs department. Every adult male seeking work in the Johannesburg municipal area is compelled to submit to X-ray examination before acquiring permission to work. In our early experience, some patients who initially absconded from hospital, have been retraced from this source. It is hoped that in the future, large numbers of these patients will thus be traceable. It is also hoped to extend this service to non-European adult female work-seekers in the near future.

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A CASE OF GLOMUS JUGULARE TUMOUR WITH UNUSUAL NEUROLOGICAL COMPLICATIONS

C. M. PROWSE, M.B., B.CH. (RAND), *Department of Medicine, University of the Witwatersrand and the Johannesburg General Hospital*

Glomus jugulare tumours, originating either in the middle ear or primarily as intracranial tumours,[4] with extension and involvement of multiple cranial nerves, are not rare. Involvement of CNS tracts is uncommon. The case presented here is an example of a proven case of glomus jugulare tumour in which numerous attacks of left hemiplegia and one attack of right hemiplegia occurred, all with recovery. A still more unusual feature was transient, severe, involvement of respiratory function.

In the territory of the carotid blood flow, glomus bodies[1] are normally present as minute structures of 1·5 mm. average diameter.[2] They consist of well-circumscribed areas of epitheloid cells surrounded by a highly vascular stroma, lying in the adventitia of the jugular bulb or along the course of the nerve of Jacobson and the nerve of Arnold.[2] They may occur at other sites in and about the region of the petrous temporal bone.[2] Their function is unknown, but they may play some part in the chemo-receptor mechanism of circulatory control.[5] Histologically, glomus bodies closely resemble the carotid and aortic arch bodies, and since they do not stain with chrome stains, they have been generically labelled 'nonchromaffin paraganglia'.[10, 14] They may become tumorous at any site at which they usually occur, the commoner sites being the middle ear and in close association with the jugular bulb. Variation in the clinical presentation of these tumours is attributed to the difference in anatomical sites at which glomus bodies exist. Their diagnosis is presumptive on clinical and radiological grounds and is confirmed on biopsy.

CASE REPORT

A 47-year old European female was admitted to the Johannesburg General Hospital on 21 September 1957 on account of a sudden 'collapse' followed immediately by a left-sided hemiplegia.

Ten years before this admission she began to complain of right-sided earache and 'whistling' of the voice. The pain was lancinating in nature and radiated to the right eye. She was seen by a surgeon who told her that she had a 'blood bag' in the right ear. Removal of this 'bag' was attempted on three separate occasions in 1947, 1948 and 1949. Each operation was accompanied by profuse haemorrhage from the ear, necessitating blood transfusion on each occasion. The earache persisted unchanged.

About 3 months after the third operation, in 1949, she collapsed after getting off a tram. She was 3½ months pregnant at the time, and was admitted to the Johannesburg General Hospital. She regained consciousness after 10 hours. A diagnosis of left basal pneumonia was made. During convalescence she developed epileptiform seizures, which, she was told, were grand mal epilepsy. She cannot remember how long these continued, and was allowed to go home, where she stayed in bed until the end of her pregnancy. A normal child was delivered when she was 40 years old. She had had rheumatic fever and chorea at the ages of 13 and 20 years respectively, and during the last trimesters of each of her 6 pregnancies she complained of some degree of dyspnoea on effort, palpitations and oedema of the ankles. She was told that she had rheumatic heart disease, and accepted the advice to be sterilized after the birth of her last child in 1949.

A month after delivery she was sterilized. On the fourth post-operative day she suddenly became 'paralysed' in all four limbs, but she cannot recollect any sphincteric or sensory abnormality. She was discharged in this state and remained in bed at home for 9 months. Recovery was gradual but complete.

In 1951, due to the persistence of the original earache, she consulted an otorhinolaryngologist, who advised mastoidectomy The surgeon described the findings of a highly vascular polyp in the middle ear on the right side. Attempted removal of the polyp was met by profuse haemorrhage which persisted for 2 days. For the 4th time she was given a blood transfusion. Biopsy of the growth was reported on histologically as being an 'haemangio-endothelioma'. Immediately after the operation she noticed complete deafness in the right ear and loss of use of the facial muscles on the same side. During the intervening years, between 1951 and 1956, she regained partial use of the muscles of the face, but remained completely deaf. During this same period, she complained of attacks of dizziness and 'black-outs'. She noticed these particularly whenever she was excited, breathless and on bending forward. It was the latter observation that prevented her from carrying out the household chores, for, although fully ambulant, and with no notable degree of cardiac disability, she was afraid to stoop forward for fear of blacking out.

In August 1956 she developed a sudden left-sided hemiplegia and was bedridden for a month. Recovery was spontaneous and complete. Again in August 1957 there was a recurrence of the hemiplegia, lasting only four days this time and leaving no residua.

On the day of the present admission (21 September 1957) while climbing some stairs. she suddenly experienced dizziness, palpitations and flushing of the face. She 'went lame' down the left side of the body, experienced momentary lancinating pain down the left side of the body and the right side of the face and for some minutes was unable to speak. She did not lose consciousness. On examination there was a flaccid paralysis of the left side of the body with hoarseness of the voice. Palsies of the 5th, 6th, 7th, 8th, 10th, 11th and 12th cranial nerves on the right were noted. There was wasting of the sternomastoid and trapezius muscles on the right side, and hemiatrophy of the right side of the tongue. The right ear drum was replaced by red granular tissue. Abdominal reflexes were absent on both sides and both plantar responses were flexor. The heart was slightly enlarged, in sinus rhythm, and displayed signs of a mitral stenosis. There was no evidence of congestive cardiac failure. The blood pressure was 145/110 mm. Hg. The following day the 6th-nerve paresis returned to normal.

During the next 2 weeks there was considerable improvement in the power of the left leg and arm. She however, began to complain of increasing difficulty in swallowing and was unable to protrude the tongue out beyond the teeth. On the 24th day after admission, when the weakness of the left arm and leg were much improved, she developed a paralysis on the right side of the body, the right arm being more affected than the leg. At about this time she had begun complaining of an oppressive feeling in the chest and difficulty with breathing, most notable during the night. There were no signs or accompaniments of congestive cardiac failure and her symptoms were considered clinically to be due to some form of central respiratory involvement. This view seemed to be justified clinically, since she gained immense relief from the use of a cuirasse respirator.

Special investigations, including full blood counts, serum electrolytes and blood urea estimations and radiology of the chest were all normal, except for a doubtful increase in the protein content of the cerebrospinal fluid (45 mg. %). However, X-rays of the skull were most informative, and a copy of Dr. R. Glyn Thomas' report is included:

> 'There is destruction of the right jugular foramen, extending anteriorly towards the temporomandibular joint, and posteriorly towards the condylar fossa. The right petrous bone tip (Fig. 1) is completely destroyed and there is irregular moth-eaten destruction, leaving small islands of bone intact, extending laterally into the middle ear region. Auditory ossicles are visible on the left but not on the right. Both vertebral artery foramina in the atlas are large. A very large mastoid emissary vein foramen is demonstrated on the Stenver's view of the right temporal bone. This suggests and extremely vascular lesion. A clear-cut area of operative removal of the temporal air cells is present behind the right acoustic meatus.

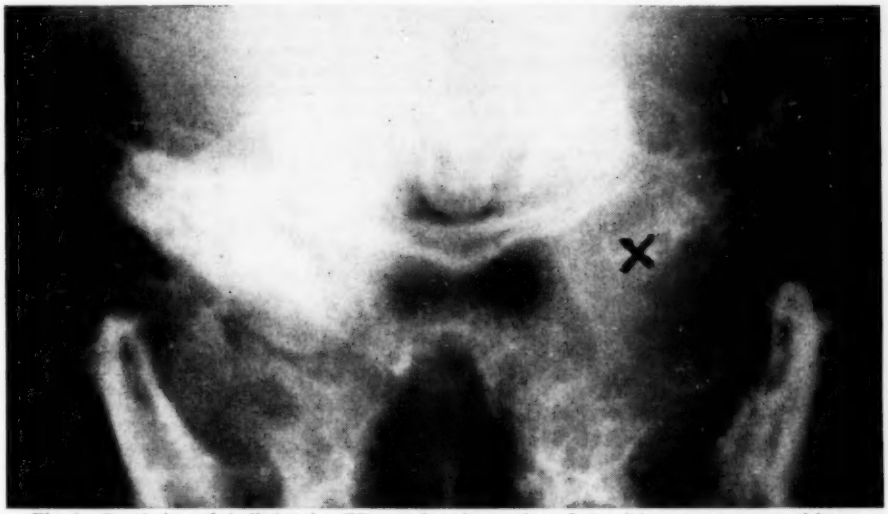

Fig. 1. Basal view of skull showing (X) complete destruction of the right petrous temporal bone. Compare the density of the left petrous temporal bone.

Interpretation: The radiological appearances are those of a glomus jugulare tumour arising in the right jugular fossa. There is, in addition, evidence of operative removal of temporal air cells. The following is the differential diagnosis:

1. Extension upwards to the base of the skull of a naso-pharyngeal tumour.
2. Metastatic tumour involvement.
3. Carcinoma of the right middle ear with extension chiefly medially. This seems unlikely.
4. Glomus jugulare tumour.

Conclusion: The appearances favour the diagnosis of a glomus jugulare tumour (of the right temporal bone) arising from the jugular fossa area'.

In view of the X-ray report and the clinical picture, a review of the biopsy slides of 1951 was requested and an ammended diagnosis of glomus jugulare tumour was made. On the evidence, a course of deep X-ray therapy was instituted. Under radiotherapy, the improvement previously noted, continued.

The use of a respirator was discontinued when it was found that she no longer required it. A review on 1 December showed that there was still present a gross weakness of the right arm with increased jerks, together with some residual weakness of the other limbs. The 7th, 10th, 11th and 12th cranial nerves remained paralysed, and the deafness was unchanged. Sensation of the tongue on the right side was found to be lost, and there was hyperaesthesia to all modalities of sensation on the right side of the body. Hyperventilation of 4 breaths at this stage produced a very notable feeling of intense dizziness and faintness, with a bradycardia.

The course of deep X-ray therapy was completed on 11 December, a total tumour dose of 3,800 r having been given. Enquiries revealed that in 1951 she had received a dose of 2,350 r privately. In view of this, further treatment was abandoned in favour of an expectant approach. In the course of the next week or two, the weakness of her limbs improved enough for her to get out of bed and walk. At the time of her discharge on 21 December, she was walking normally, the limbs were of normal power, and the residual neurological signs were confined only to the cranial nerves. The 7th, 8th, 9th, 10th, 11th and 12th nerves on the right remained paralysed. It required about 20 breaths to produce the hyperventilatory symptoms previously produced by 4.

DISCUSSION

The diagnosis of glomus jugulare tumour in this patient was confirmed by biopsy. Not infrequently a glomus jugulare tumour is histologically mistaken for a vascular endothelioma, as well as for a variety of other tumours,[6, 9-10] Poor site of section and imperfect technique in the preparation of the histological specimen are the main causes of this error.[9, 10] As the tumour was first described in 1945,[15] it is not unlikely that pathologists are still unfamiliar with its histological appearance.

Numerous cases of glomus jugulare tumour with middle ear symptoms and with or without cranial nerve palsies, have survived over 20 years. Survival for 10 years, as in the present case, is not unusual, provided the tumour does not spread towards the lower cranial nerves to involve the vital centres.[12] The 7th nerve paralysis and the deafness in this patient could well be accounted for by the local tumour, or ascribed to a post-operative complication of mastoidectomy.

The other neurological manifestations require an explanation. Extension of the tumour through the petrous temporal bone, to involve the lower cranial nerves, is not unusual.[8] A less common feature is the numerous attacks of functional loss of the pyramidal tract, involving mainly the left side in this case. All these attacks were severe and incapacitating, but transient. The involvement of respiratory function is also unusual, only one case being reported with a history of 'suffocation'[13] The difficulty with breathing appeared to be due to respiratory-centre involvement since it had none of the qualities of cardiac dyspnoea and was dramatically relieved by the respirator. The mechanism whereby the tract functions were affected temporarily, yet severely, remains speculative. A single glomus jugulare tumour, originating in the middle ear, eroding the petrous temporal bone, and eventually surrounding (and in places compressing) the upper medulla, could explain the clinical picture except for the transient nature of some of the symptoms. Changes in the vascularity of the tumour, which in themselves would be dependent upon carotid blood flow, could cause these transient features. Changes in the vascularity could be affected by the relative hypoxia of exercise in a person with a rheumatic heart, by changes in posture or pressure and by hyperventilation from any cause, thereby implicating chemo-receptor activity of the tumour.[5] In

this physiological response, glomus jugulare tumours appear to behave in the same way as carotid body tumours.

Opinions vary in regard to the radiosensitivity of the glomus jugulare tumours. Surgical intervention is fraught with the danger of massive haemorrhage, but seems to be the treatment of choice when the tumour is localized to the middle ear.[6] In any case there are good grounds for advising radiotherapy with or without surgical intervention.[3, 6, 7, 11] In the present case it is not possible to come to any conclusions in regard to the sensitivity of the tumour, since previous attacks had cleared up spontaneously and the present attack was improving at the time that deep X-ray therapy was started.

SUMMARY

A case of glomus jugulare tumour (with evidence of intracranial extension) is described, with some usual and some unusual neurological complications. The unusual complications were recurrent hemiplegias, involvement of the respiratory function and central nervous symptoms which could be readily produced on hyperventilation.

I wish to thank Prof. G. A. Elliott for his invaluable guidance and assistance in this case and for his permission to publish the case record; the department of radiology and Dr. R. Glyn Thomas for the radiological report, advice and assistance in the preparation of the roentgenograms; Dr. I. Webster of the South African Institute for Medical Research for his review of the biopsy slide; Messrs. A. M. Shevitz and H. H. Kruger of the photographic unit of the Department of Medicine of the University of the Witwatersrand, for the photographic reproductions.

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INVESTIGATION INTO THE AETIOLOGY AND TREATMENT OF PICA*

PHILIP LANZKOWSKY, M.B., CH.B. (CAPE TOWN)

Department of Child Health, University of Cape Town and Red Cross War Memorial Children's Hospital, Rondebosch, Cape Town

Pica could be defined as a perversion of appetite with persistent and purposeful ingestion of one or more of a large variety of unsuitable substances, seemingly of no nutrient value. It is associated with the passage of these substances unchanged in the stool, or with radiological evidence of their presence in the gut when they are radio-opaque. The word is derived from the Latin meaning magpie. Pica is world-wide in distribution. It occurs at all ages and is not limited to childhood. The incidence of pica is far greater than is commonly realized.

Aetiological Concepts

For centuries writers have recorded observations on the subject, but the most recent reports still leave the matter of therapy an unsolved problem. The purpose of this investigation was to assess the importance of various aetiological concepts of the past and in consequence to suggest a simple and effective remedy for this alarming aberration from the normal behaviour pattern of childhood.

Twelve children under 7 years of age were investigated. In most cases pica was severe, and children had to be restrained. Sand, soil, pieces of brick, stones, pieces of wood, black coal and clay were ingested in varying combinations and amounts. Apart from pallor of mucosae in 5 children, the children appeared to be 'normal' on physical examination.

The nutrition, as assessed from the serum-protein levels, was adequate and better than that of a control series. Mean total serum protein in the pica group was 7·19 g.% as compared with 5·67 g.% in a control series. This difference is statistically highly significant.

Consideration of their family income revealed that the pica group was better off financially. The mean weekly income assessed on *per capita* basis was 26·13 shillings in the pica group as compared with 13·08 shillings in a control series.

Studying the birth weight of the pica group revealed a statistically significantly higher birth weight in the pica group as compared with a control series of normal infants. The mean birth weight in this series was 7 lb. 15½ oz., as compared with 6 lb. 15½ oz. in a control series.

Children suffering from pica were mentally normal, of average intelligence, and did not suffer from other behaviour problems.

A significantly higher incidence of worm infestation (83%) was found in the pica group as compared with a control series (20%).

Radiological examination carried out on 8 cases showed opaque material compatible with sand or stones in the gastro-intestinal tract in 5 cases. In 1 of these cases the appendix was outlined and filled with sand. This is the first time that an X-ray examination of the abdomen has been used in confirming the diagnosis and response to therapy in children with pica.

The most important and constant abnormality found in the pica group was iron-deficiency anaemia. The mean haemoglobin level in the pica group was 7·89 g.% as compared with 10·52 g.% in a control series of the same age and background. The other haematological investigations (P.C.V., M.C.H.C. and peripheral smear), coupled with the response to iron therapy, confirmed that the anaemia was of the iron-deficiency type.

Treatment

Once the foregoing investigations had been completed, therapy was commenced. Intramuscular iron-dextran compound (imferon) in doses varying from 200-400 mg. was given in 9 cases. Blood transfusion was administered to 2 cases and oral ferrous gluconate to 1 case. It must be emphasized that at the time of the treatment of the pica no other medicaments (e.g. vermifuges or antibiotics) were employed. No psychological advice was given and the condition was treated purely as anaemia.

The results of treatment, on the whole, were highly gratifying. There was a marked rise in haemoglobin level in nearly every case. The mean haemoglobin level on completion of treatment was 11.43 g.%, showing a mean rise of 3.54 g.%. There was a rapid and dramatic cure of the pica, usually within 1-2 weeks of commencement of treatment. A control case, initially treated with intramuscular sterile water, failed to respond until iron therapy was given. There was an indication that although blood transfusion restored the haemoglobin to normal, it contained insufficient iron to meet the needs of restoration and iron storage to cure the pica.

The 5 cases which before treatment had shown radio-opaque material in the bowel, showed complete radiographic clearing in every case within 10 days. This was confirmatory evidence of response to therapy. They all showed the usual beneficial effects of iron therapy on the appetite, behaviour, and sense of well-being of the child.

Conclusion

The conclusion is drawn that iron-deficiency acts as a physiological urge initiating pica, that it is consequently the major cause of pica, and that iron therapy is curative.

* Abstract of a paper presented at the Postgraduate Seminar, Red Cross War Memorial Children's Hospital, Rondebosch, September 1958 and at the South African Paediatric Congress, Pretoria, October 1958.

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THE AUTOPSY INCIDENCE OF LIVER SIDEROSIS IN THE THREE RACIAL GROUPS OF CAPE TOWN*

C. J. UYS, M.D., D.CLIN. PATH., J. J. VAN DER WALT, M.B., CH.B., G. M. POTGIETER, M.B., CH.B. AND H. H. GOLBY, M.B., CH.B.,
Department of Pathology, University of Cape Town

In order to supply further information on the distribution of siderosis in Africa and thus on the possible role of environmental factors on its pathogenesis, a survey was conducted to establish the incidence of siderosis in the three racial groups of Cape Town. Twelve hundred consecutive autopsies, performed over a 4-year period extending from the beginning of 1954 to the end of 1957, formed the basis of the survey and included individuals of all races aged 10 years and over.

Acting on the premise that the extent of liver siderosis can be accepted as a reliable index of the degree of organ siderosis existing in an individual, and that close correlation usually exists between histological estimation of severity and quantitative chemical estimation, the study was confined only to a histochemical and morphological evaluation of liver siderosis in these autopsies. Sections selected from both lobes of the liver were stained by a modified Perl's method, and grading was done by one of us (C.J.U.) without any knowledge of the individual's age, race, sex, or post-mortem or clinical data. The following system of grading was adopted:

Grade A: Haemosiderin confined to either Kupffer cells or liver cells;

Grade B: Haemosiderin in both Kupffer cells and liver cells;

Grade C: Haemosiderin in Kupffer cells, liver cells and in the portal tracts, either free-lying or in macrophages.

Few grade-A livers would be associated with a quantitative increase of iron and, while some of the livers of grade B might be associated with a quantitative increase of iron, it was felt that only in those of Grade C would this be constant. Thus, for the purposes of comparative statistical analysis, only the findings relating to grade-C livers were utilized.

Grade-C siderosis was present in 23·6% of Europeans, in 26·5% of Coloured, and in 61·3% of Bantu subjects. There was a statistically significant association of the incidence of grade-C siderosis in the Bantu as compared with Europeans and Coloured, and no significant differences existed between Europeans and Coloured ($p<0{\cdot}01$ by x^2 method). The morphological distribution of haemosiderin showed insignificant variations between the racial groups but the degree of pigmentation was definitely severer in the Bantu in grade-C siderosis than either the Europeans or the Coloured of the same grade, in whom the severity usually seen in the Bantu was seldom encountered; in the Europeans and the Coloured the severity of pigmentation was approximately equal.

The age incidence when corrected for sample size, did not show any significant peak incidence in any of the racial groups, neither were there significant differences in age distribution between the racial groups. Males, however, were significantly more commonly involved than females in each of the racial groups.

While the Coloured do not constitute an ethnic entity, they do occupy an intermediary position between the European and the Bantu on the socio-economic scale. The living conditions and standards of the less privileged individuals of this group approach those seen in the Bantu, while there are appreciable numbers in whom living conditions are not significantly different from those of Europeans. With regard to dietary habits, however, the Coloured entirely conform to European standards and certainly do not use the iron cooking utensils so commonly employed by the Bantu.

Thus, were malnutrition a determining factor in the development of siderosis, the Coloured could rightly be expected to show an incidence intermediate between the Bantu and European. However, the finding that the incidence in the Coloured is virtually equal to that in the European and significantly lower than that in the Bantu, would tend to favour a pathogenesis which links the siderosis in the latter with dietary habits and iron intake rather than with dietary deficiency and malnutrition.

* Abstract of a paper read at a meeting of the Research Forum, University of Cape Town, held at Groote Schuur Hospital, Cape Town, on 4 September 1958.

MEDICAL COUNCIL ELECTION

Below are published particulars concerning candidates for election to the South African Medical and Dental Council:

BLACK, JAMES, M.B., CH.B. (EDIN.), M.D. (EDIN.) F.R.C.O.G.

General practitioner in Springs, Transvaal, 1911 to 1927. Specialist obstetrician and gynaecologist, Johannesburg, 1929 to date. Professor of Obstetrics and Gynaecology, University of the Witwatersrand, 1939 to 1946. Lecturer on Medical Ethics, University of the Witwatersrand, 1952 to date. Member of Council of Southern Transvaal Branch of Medical Association for about 25 years.

President of the Branch in 1938.

Member of the Federal Council of the Association for about 19 consecutive years till 1957.

Awarded the Association's Bronze Medal in 1953.

Associate Founder of the College of Physicians, Surgeons and Gynaecologists of South Africa.

Chairman of the South African Regional Council of the Royal College of Obstetricians and Gynaecologists, 1956 to date.

Elected Member of the South African Medical and Dental Council since December 1948. During that time was Chairman of the Specialists Committee from March 1949 to March 1952 and Member of the Executive Committee from March 1952 to date.

BLOOM, ARTHUR, *M.C.*, M.D., M.R.C.P. (EDIN.), D.P.H. (LOND.)

Was born in Grahamstown, C.P., and was educated in that town. Qualified M.B., Ch.B. in Edinburgh and at a later date obtained M.D. (Honours) and was also admitted M.R.C.P. (Edin.).

Served throughout the First World War in the R.A.M.C. and at its conclusion returned to South Africa. Started practice as a physician in Johannesburg and soon afterwards was elected to the Honorary Staff of the Johannesburg General Hospital and was also made Lecturer in Medicine to the University of the Witwatersrand. He retained these positions until 1940, when he retired as Senior Honorary Physician to the Hospital.

His interest in the affairs of the profession began when he became Secretary of the Central Committee of the B.M.A. which was the equivalent of the present Federal Council. He held this post from 1919 until the Medical Association of South Africa was formed. He was for many years a member of the Council of the Southern Transvaal Branch of the M.A.S.A. and in 1931 was elected President. In addition he was a member of the Federal Council until he left Johannesburg.

At the end of the last war settled in Durban; he retained his interest in medicine by becoming Honorary Physician to McCord's Zulu Hospital. At the request of a number of the medical profession of Natal stood for election to the Medical Council for the quinquennial period 1949-1953 and was elected and was re-elected for the 1954-1958 period. Has served on the Specialists Committee throughout his membership and for the last 5 years has been on the Executive Committee, which committee deals with registration, discipline, ethics, finance and other matters that do not fall within the terms of reference of other committees.

BRAUN, LOSWEL ISRAEL BRAUDE, *O.B.E.*, M.D. (LOND.), F.R.C.P. (LOND.), LL.D. (HON. RAND)

Has been an elected member of the S.A. Medical and Dental Council since 1948, serving for two periods.

Served on the Executive of the S.A. Medical and Dental Council since March 1956.

Served on Federal Council of the S.A. Medical Association for

22 years and was Vice-chairman of this Council for approximately 3 years.

Was a member of the Augmented Executive Committee of Federal Council during the original negotiations in 1946 with the Transvaal Province on the question of Free Hospitalization. Later was appointed Chairman of this Committee and continued in that capacity for some years.

In 1952 was elected President of the S.A. Medical Association and became President of Congress in that year. Whilst holding that office the University of Witwatersrand bestowed on him the honorary degree of LL.D.

Gold medal of the South African Medical Association, 1956.

BREMER, JULIUS KARL, M.B., CH.B. (KAAPSTAD), F.R.C.S. (ENG.)

Dr. J. K. Bremer is op 10 Oktober 1912 in Cradock, K.P. gebore. Hy het sy skoolopleiding aan die Hoër Volkskool, Graaff-Reinet ontvang en het daarna aan die Universiteit van Kaapstad in die geneeskunde studeer. Hy het in 1935 die graad M.B., Ch.B. behaal en was daarna gedurende 1936 inwonende geneesheer onder Professor Falconer en toe onder Professor Saint in die Somerset-Hospitaal.

Vanaf 1937 tot 1940 was hy in Engeland vir nagraadse studie. Gedurende die tyd het hy in 1938 die graad F.R.C.S. (Eng.) behaal en spesialistiese opleiding in die chirurgie ontvang.

By sy terugkeer in Suid-Afrika was hy van 1940 tot 1944 in Kaapstad in die praktyk as algemene chirurg. In 1944 het hy na Pretoria verhuis waar hy tot vandag nog in die algemene chirurgiese privaatpraktyk besig is. Hy was gedurende die tyd eers deeltydse lektor in Anatomie, later deeltydse lektor in Chirurgie, en vanaf 1950 tot 1955 Professor van Chirurgie aan die Universiteit van Pretoria. Sedert 1955 was hy as deeltydse lektor in Chirurgie aan die Universiteit van Pretoria werksaam, en werk hy ook deeltyds in die departemente Algemene Chirurgie en Torakale Chirurgie van die Pretoriase Hospitaal. Hy was vroeër lid van die Pretoriase Hospitaal-Raad en het die Universiteit van Pretoria op twee geleenthede op die Nasionale Gesondheidsraad verteenwoordig.

FREED, LOUIS FRANKLIN, HONS. B.A., M.A. (PSYCHOLOGY, WITH DISTINCTION) (S.A.), D.PHIL. (SOCIOLOGY) (PRET.), M.B., CH.B. (ST. AND.), M.D., D.P.M., D.P.H., D.T.M. & H., F.R.S.S.AF., F.R.A.I., F.S.S., F.R.G.S.

Hon. lecturer on medical sociology and lecturer in Department of Psychiatry, Univ. Witwatersrand. S.A. editor of *Vita Humana: International Journal for Human Development*, Switzerland. Formerly S.A. editor of *International Journal of Sexology*. Formerly M.O., Sterkfontein Hospital, Krugersdorp, and Tara Hospital, Johannesburg. Formerly hon. M.O., Frieda Hartley Shelter, Johannesburg. Was made Fellow of the Royal Society of S.A. for contributions to social medicine and social psychiatry.

Author of the following:

1. 'The Problem of European Prostitution in Johannesburg: A Sociological Survey' (1949) (prescribed by Univ. Pretoria, Witwatersrand, and South Africa).
2. Sex Education in Transvaal Schools (1937).
3. The Social Aspect of Venereal Disease (1951).
4. The Philosophy of Sociological Medicine (1948).
5. The Need for a Division of Criminal Science in the Department of Justice of the Union Government (1948).
6. 'Crime', Chapter in 'Social Medicine', Ed. by Cluver (1951).
7. Findings of an Investigation into a Group of Patients presenting with the Symptoms of Schizophrenia (1953).
8. A Methodological Approach to the Problem of Mental Disorder (1956).
9. The Use of Methodological Principles in the Investigation of a Case of Trichomoniasis (1956).
10. The Psycho-sociology of Neoplasia (1958). Etc., etc.

Submitted memoranda to Police Enquiry Commission on Native Crime, Transvaal Provincial Education Commission, Penal Reform Commission, Women's Legal Disability Commission. etc.

Played a part in establishment of Medical Faculty at Univ. Pretoria; was Hon. Treasurer, Actions Committee of National War Memorial Health Foundation; was Chairman, Johannesburg Branch of Social Services Assoc. of S.A.; was Member of Council of Southern Transvaal Branch of S.A. Med. Assoc.; represented Union of S.A. at International Congress on Trichomoniasis, Rheims, France, 1957.

Evolved the concept of 'the human continuum' in the philosophy of medicine, and elaborated principles of methodology *vis-à-vis* medical, medico-social and medico-sociological problems. Has read with his brother practitioners the lesson of mercy to the lost and of compassion for the defeated.

His biography listed in 'Who's Who in British Science', and in 'The International Who's Who'.

RADFORD, AUBREY, *M.C.*, M.B., CH.B., F.R.C.S. (ENG.), M.P.

South African born. Educated at Pietermaritzburg College and at Edinburgh, Birmingham and London Universities.

Consulting Surgeon, Addington Hospital and Honorary Surgeon, King George V Hospital, Durban.

Major, Army Medical Corps, First World War. Major, Army Medical Corps, Second World War.

Member, Oosthuizen Commissions on Pneumoconiosis and Tuberculosis.

External Examiner in Surgery, Universities of the Witwatersrand and Natal.

Examiner in Surgery, College of Surgeons of South Africa.

Honorary Secretary, Natal Coastal Branch of South African Medical Associan for 4 years.

Member of the Federal Council of Medical Association for 4 years.

Founder and Trustee of Natal Radium Fund and Anti-Cancer Fund.

Member of the South African Medical and Dental Council.

Member of the South African Nursing Council.

Member of Parliament for Durban Central.

SCHAFFER, RUDOLPH, M.A., M.D. (UNIV. DUBL.)

Educated at Rhodes University College, the University of Cape Town and Trinity College, Dublin, where I graduated M.B. in 1924 and M.D. in 1929. I have done postgraduate work in Britain, in Germany and in the United States. I was on military service from 1940 until 1946 and while on military service was registered by the Medical Council as a Specialist Physician, but on demobilization resumed my general practice.

I became a general practitioner in 1924 and am still an active general practitioner.

I have been Railway Medical Officer, Acting District Surgeon and part-time Hospital Superintendent. I joined the British Medical Association in 1924 and joined the Medical Association of South Africa when it was founded. I have been Chairman of the Queenstown Division, President of the Border Branch, and during the past 12 years a member of Federal Council. I have been elected to the Executive of Federal Council on 3 occasions and this year have the honour to be President of the Medical Association of South Africa.

I have accepted nomination as, in the opinion of some of my colleagues, I shall be able to represent their views on Medical Council.

I am a member of the General Practitioners' Group of the Association and believe that everything possible should be done to improve the standards of practice by providing opportunities for the professional advancement of the general practitioner.

If elected I will do my best for all the members of the medical profession. We are all of equal importance and of equal status.

SICHEL, ALAN WILLIAM STUART, LL.D. (RAND), LL.D. (N.U.I.), B.A. (CAPE TOWN), M.D. (EDIN.), D.O., D.O.M.S.

I have been requested by colleagues who hold high positions in the medical profession to stand as a candidate at the forthcoming election for membership of the S.A. Medical and Dental Council. In agreeing to do so I feel that if elected my long experience of problems relative to the practice of medicine will enable me to play a worthwhile part in the business of the Medical Council in safeguarding the rights of the public and promoting the interests of members of the medical profession.

I have practised my speciality in Cape Town since 1920 and am still in active practice. My professional record is as follows:

Member of Medical Association of S.A. from 1920. Member of Branch Council of Cape Western Branch continuously since 1921, being President of the Branch in 1941. Served on numerous Committees of Branch Council and was Hon. Librarian of the Branch for 14 years.

Member of Federal Council continuously since 1935. From 1945 to 1951 President of the Medical Association of S.A. and from 1945 to 1957, a period of 12 years, Chairman of Federal Council. Chairman of Head Office and Journal Committee from 1949 to date.

In 1951 President of the British Medical Association and subsequently appointed a Life Vice-President.

Life member of the Ophthalmological Society of the UK and a Past-President of the Ophthalmological Society of S.A.

In 1952 Gold Medal of the Medical Association of S.A. and the honorary degree of LL.D. of the University of the Witwatersrand and also of the National University of Ireland.

During World War II member of the Consultative Council of the D.G.M.S. and Chairman of the Emergency Committee of the Cape Western Branch.

Chairman of the Committee of Federal Council to promote the formation of the College of Physicians and Surgeons, and later Chairman of the Steering Committee of the College for 2½ years. Member of first Council of the College.

Joint-Lecturer in Ophthalmology at the University of Cape Town for 12 years. Ophthalmologist to the Railways and Harbours Sick Fund for 17 years. Hon. member of the R.M.O. Group.

Member of the Executive Committee of the National Road Safety Organization of S.A. for the past 6 years representing the Medical Association of S.A.

TURTON, EDWIN WILBERFORCE, M.B., CH.B. (KAAPSTAD)

Ek, Edwin Wilberforce Turton, gebore in die Kaapprovinsie 26 Januarie 1913 is van 1940 algemene praktisyn te Boksburg, Transvaal. Ek is heeltemal tweetalig.

Vir die laaste 14 jaar is ek verbonde aan die hospitaalpersoneel van die Boksburg-Benoni-Hospitaal, as deeltydse algemene praktisynchirurg.

Ek het vir 14 jaar in bogenoemde hospitaal se Raad gedien, en was die laaste 6 jaar Voorsitter daarvan.

Ek is, vanaf die stigting, lid van die Oos-Randse Tak van die Mediese Vereniging, en ek was ook die heel eerste President van die Tak.

Vanaf 1947, is ek lid van die Federale Raad van die Mediese Vereniging en is nou Ondervoorsitter van die liggaam, en dien ook op die Uitvoerende Komitee daarvan. Ek is ook gekies om op die Transvaalse aanvullende Uitvoerende Komitee daarvan te dien. Bogemelde komitee onderhandel al van 1946 met die Transvaalse Hospitaaldepartement i.v.m. vrye hospitalisasie, en ons is ook geraadpleeg oor die afskaffing daarvan.

Na die beëindiging van vrye hospitalisasie is ek aangestel as lid van die nuwe liggaam, die Navorsing- en Beplanningsraad op Hospitale. Hierdie Raad ondersoek en doen navorsing op alle hospitale dwarsdeur die Transvaal.

Ek is ook die Voorsitter van die Wes-Transvaalse Spoorwegdoktersgroep.

Ek is lid van die Myndokters-Siekefondsgroep, en dien op die uitvoerende komitee daarvan.

Met die wye ondervinding van hospitalisasie en algemene mediese praktyk asook 'n deeglike kennis van georganiseerde mediese dienste in die algemeen, en in die besonder my ondervinding van kontrakpraktyk i.v.m. die verskillende tipe siekefondse en mediese bystandfondse voel ek dat ek 'n goeie en deeglike kennis besit, en bied my dienste aan as 'n kandidaat vir die Mediese Raad se aanstaande verkiesing.

VERCUEIL, LEON OLIVIER, B.SC. (PRET.), M.A., M.D., D.P.H. (UNIV. DUBL.)

Dr. Vercueil was born at Middelburg, Transvaal, where he matriculated. He proceeded to Transvaal University College (now Pretoria University) where he graduated B.Sc. After taking the first two years of medical study at Cape Town University he proceeded to Trinity College, Dublin, where he qualified M.B., B.Ch., B.A.O. in 1922, and later proceeded M.A., M.D. and D.P.H.

Since 1924 he has been in general practice on the West Rand, where he has taken an active interest in medical affairs as well as in the life of the community. From time to time he has made visits for postgraduate study in Dublin, London, Oxford, Liverpool, Vienna and Budapest.

Chairman of the West Rand Division of the Southern Transvaal Branch of the Medical Association from 1944 to 1951, and again in 1958; member of the Southern Transvaal Branch Council since 1939, President of the Branch in 1954; member of Federal Council since 1944 and member of its Central Committee for Contract Practice since its inception and Chairman of this Committee for the past 4 years; Chairman of the Workmen's Compensation Committee of Federal Council. Chairman of the Mines Benefit Societies Medical Officers' Group 1944 to 1954 and again for 1958; and Chairman of the Railway Medical Officers' Group since 1950. During the dispute several years ago in connection with the Ordinance to provide free hospitalization in the Transvaal, was very active in organizing the country practitioners in the Transvaal.

Association Bronze Medal for Meritorious Services, 1958.

Was a member of the West Rand School Board for 20 years and for 30 years a member of the Discoverer's Hospital Board and its Chairman for 7 years. Served in World War II as Lieutenant Colonel in command of the 18th Field Ambulance throughout the North African Campaign.

His experience in big-game hunting, and his interest in the fauna of the country, have led to his election, for several years already, as Chairman of the S.A. Hunters' and Game Conservation Association.

It is submitted that his activities in the profession and the Association qualify Dr. Vercueil to represent his colleagues on the Medical Council, and that his experience will be of value in the deliberations of that body.

WAGNER, PHILIPP FREDERICK HENRY, M.A., M.D., B.CH., B.A.O. (UNIV. DUBL.)

I am a general practitioner of 35 years' standing and have served two terms on Medical Council as such and now offer myself again as a candidate in the forthcoming elections.

The Association has done me the honour of electing me Congress President for the East London Congress to be held in September 1959, and has also done me the honour of electing me as President Elect for the Association for 1960. I feel they have given me this high honour in recognition of my work for the Association during the past 35 years.

On the Council I have worked strenuously for the good of general practitioners and was a member of the *ad hoc* Committee that dealt with the new Rules for Specialists, and together with two other general-practitioner colleagues on Medical Council we were able to have the new rules passed and sent for promulgation to minimize unfair competition by specialists, without infringing on the legitimate rights of specialists.

While a Member of the Specialist Committee I prepared a memorandum, which is now in the Council's Standing Orders, to enable a general practitioner with a higher degree and long experience to get onto the Registrar without the impossible demand for years to be spent in a teaching hospital.

My real reason for seeking re-election is that I love the work and have found something to do that keeps me full of interest and gives me a feeling of well-being to do things which might benefit my colleagues, especially those in general practice.

THE BENEVOLENT FUND : DIE LIEFDADIGHEIDSFONDS

The following donations during October 1958, are gratefully acknowledged:

Votive Cards in Memory of:

Dr. J. A. Levitt *by* Dr. P. C. du Plessis.

Mrs. Molly Cooper *by* Dr. C. B. Cole.

Dr. T. A. Fuller *by* President and members of S.A. Society of Anaesthetists, Dr. J. Abelsohn.

Mrs. van Arkel *by* President and members of S.A. Society of Anaesthetists.

Mr. G. H. Stark *by* Dr. V. Brink.

Dr. J. S. du Toit *by/deur* Dr. J. Abelsohn, Drs. L. van der Spuy, P. D. Nel, G. Theron en C. J. Luyt.
Mevr. C. G. Potgieter *deur* Dr. D. H. le Clus.
Dr. T. Lotter *by* Dr. H. Aneck-Hahn.
Mrs. C. Blumenthal *by* Dr. R. Schaffer.
Total amount received from Votive Cards: £21 0s. 0d.
Services rendered to:
Mrs. McNally and infant *by* Dr. H. L. Wallace.
Mr. W. Katzenstein *by* Dr. J. Meyer.
Dr. R. S. Verster *deur* Dr. J. D. Meyer.
Mrs. Keogh *by* Dr. L. J. A. Lowenthal.
Total amount received for Services Rendered £28 8s. 0d.
Donations:

	£	s.	d.
Dr. H. S. Gear	1	0	0
S.A. Mutual Life Assurance Society	2	2	0
Dr. H. L. Currey	10	10	0
Total Donations	£13	12	0

Grand Total £63 0s. 0d.

OFFICIAL ANNOUNCEMENT : AMPTELIKE AANKONDIGING

MEDICAL AID SOCIETIES

At the meeting of Federal Council held on 1-3 October 1958 certain amendments to the Tariff of Fees for Approved Medical Aid Societies were adopted. These are set out below:

1. *Submission of Accounts*

The second last paragraph of Item 2 in the General Preamble to the Tariff of Fees is amended to read:

'If payment of an account is not received after two consecutive monthly accounts have been rendered to the member, the third monthly account, giving the full name and address (home and business if possible) of the members, shall be sent direct to the society concerned, bearing the words, written prominently in red:

"Two months overdue, please investigate."'

It will be noted that the period which has to elapse before a practitioner advises a society of the non-payment of an account has been reduced.

2. *Examination of Enquiries regarding Fees submitted by Medical Aid Societies*

An additional paragraph has been added to the General Rules Governing the Tariff on page 3 of the Tariff Book as Item 12.

'12. Approved medical aid societies may refer to the respective Branch of the Association any cases about which they are in doubt.'

3. *Section 'B'—General Practitioners*

Item 7 in this section is amended to read:

'When more than one patient in the same household is attended at the same visit or consultation, for the same or a different illness, the Tariff fee shall be charged for the first patient, and 50% of this fee for each subsequent patient.'

4. *Section 'I'—Special Procedures carried out by Neurologists and Psychiatrists*

A time limit was considered to be reasonable for the application of the maximum fee for the treatment of one patient for any one illness. The following sentence should therefore be added to the NOTE at the end of this section in the Tariff Book:

'The period of time to which this restriction of the fee applies shall be one year, calculated from the date of the initial consultation.'

5. *Section 'V'—Anaesthetic Fees*

It had been the original intention that the fees in this section should represent fees for services only but this had not been clearly stated. The following note should therefore be added at the end of the Section:

'*Note:* The charges listed above do not include the cost of materials.'

6. *Travelling Expenses*

Many societies do not grant benefits on travelling fees and cases of misinterpretation of the tariff had been reported. In order to obviate this the following amendments were made in this section on page 49:

(*a*) Paragraph 4 in the section to have the words 'in cases where travelling fees are allowed' added at the end of the sentence;

(*b*) Delete the words 'at the time the call is made' at the top of the column of mileage figures.

7. *Application of Tariff of Fees*

Many instances occur in which services are rendered to medical aid patients for which no item appears in the Tariff Book. When accounts for such cases have been submitted to medical aid societies unnecessary correspondence has followed between the doctor, the society and a Branch of the Association, because societies always require to be assured that the fees charged were in keeping with the preferential tariff. Federal Council accepted a recommendation from the Central Committee for Contract Practice that members of the Association should first obtain confirmation of their accounts in such cases from their respective Branches before rendering them. Members are therefore advised to adopt the following procedure:

When services are rendered which are not detailed in the Tariff Book, the accounts should disclose, in addition to the fee claimed, a brief description of the procedure, reference to a comparable item in the Tariff, and an endorsement of approval by the local Branch of the Association, as evidence that the fee claimed is reasonable.

L. M. Marchand
Associate Secretary

Medical House
Cape Town
7 November 1958

MEDIESE HULPVERENIGINGS

Op die vergadering van die Federale Raad wat op 1-3 Oktober 1958 gehou is, is sekere wysigings in die Tarief vir goedgekeurde mediese hulpverenigings aangeneem, soos hieronder uiteengesit:

IN MEMORIAM

L. L. PATERSON, M.B., CH.B., D.P.H. (GLAS.)

Mr. J. D. Joubert, F.R.C.S. (Edin.) *of Cape Town, writes:* It was a great shock to learn of the death of Dr. R. L. Paterson in Glasgow in October 1958.

Dr. Paterson, of Glasgow, married Miss Nessie Knight, of the same city, and came to the Transkei in 1927 to do mission work at Sulenkama, about 60 miles from Umtata. Here his family and mine met in 1932 and developed a close friendship.

They started their mission hospital in a small way, in one hut, which served for dispensary, labour ward, and all other purposes. But Bert and Nessie were people with a vision and energy which knew no limits. Nessie had taught elocution in Glasgow and was well known in Scotland. She used her connections there to establish the noted Nessie Knight Dramatic Club, and her people (the Knights and the Galts), with the help of a special committee, ran this club and produced plays at the Lyric Theatre in Glasgow, in order to collect money for the work in South Africa. When the Patersons went on leave to Scotland, they spent their time lecturing, making propaganda, organizing and scheming to get more and more funds for their great work in South Africa.

Benefactors, among them Lord Maclay, donated many thousands of pounds, and the rest of the funds were collected from public-spirited people in South Africa. Showing the confidence the public of South Africa had in their work, Nessie collected £33,000 during one trip on the Reef.

Bert Paterson was not only a good general practitioner, but also a fine surgeon and a most capable administrator; besides being a medical practitioner he was an able and sincere preacher in the Church of Scotland. But Bert Paterson was not only a good doctor, hospital superintendent and preacher; he was a man whose company was always sought after at dinner parties and other social events. He was an accomplished after-dinner speaker, and he was often called upon to propose the important toasts at weddings, which he did in all sincerity and yet with great wit and humour.

These then were the people who in less than 30 years built and developed Sulenkama into a modern hospital of over 160 beds, with a church, school, and nurses' residences where African nurses are trained. Sulenkama has a modern X-ray plant and possesses its own electrical scheme and large vegetable and fruit gardens which supply the institute with all its requirements.

Visitors from all over South Africa and the rest of the world were always welcome, and in fact were always to be found staying with the Patersons. Many a medical student in this country will remember gaining very practical instruction under the guidance of Dr. Paterson and his assistant and house surgeons. The Patersons were most hospitable people and made perfect hosts.

For many years he was a member of the Branch Council of the Transkei Branch of the Medical Association of South Africa and at one time was its President.

It is a tragedy that, with advancing years, he found too heavy the burden of the great organization he and his wife had created. It was difficult to get trained staff, medical and nursing, in the *bundu* and his health gradually deteriorated. This eventually resulted in his untimely death.

Here indeed was a family entirely devoted to the same good cause. His wife Nessie was matron of the institution and when house surgeons were not available, she undertook such work as the giving of anaesthetics and the taking of X-rays. His son Stewart is now a qualified medical man and intends following in his father's footsteps. His daughter Elspeth, a brilliant nurse, qualified 2 years ago, is also returning to Sulenkama to work.

The missionary cause in South Africa cannot afford to lose men of the calibre of Bert Paterson. To his wife, daughter and son, we offer our deepest sympathy.

PASSING EVENTS : IN DIE VERBYGAAN

Dr. Ronald Singer, Senior Lecturer in Anatomy, University of Cape Town, has been elected a Fellow of the Royal Society of South Africa.

* * *

Dr. Maurice Nellen has returned to Cape Town after attending the Third World Congress of Cardiology in Brussels, and visiting Stockholm and Israel. He has now resumed practice.

* * *

The College of Physicians, Surgeons and Gynaecologists of South Africa announces a class in the basic sciences—anatomy, physiology and pathology, to be held in Johannesburg from the beginning of 1959. Those wishing to take this course should apply to the Hon. Registrar, P.O. Box 120, Cape Town.

* * *

Dr. W. P. U. Jackson will give a lecture on his recent overseas trip, illustrated with colour slides (non-medical), in the E-floor lecture theatre, Groote Schuur Hospital, Cape Town, on Tuesday 25 November 1958 at 5.15 p.m. Highlights: Brussels World Fair, Cambridge in Springtime, San Francisco, Ancient Rome. All are welcome.

* * *

Cape Town Tariff of Fees. The Northern Areas Division of the Cape Western Branch (M.A.S.A.) announce that they accept the schedule of customary fees of the Cape Town Division *in toto* and leave it to the discretion and judgment of the individual doctor in any area to charge less than the customary fee laid down in the tariff of the Cape Town Division. The relative resolution is effective from 1 November 1958.

* * *

Symposium on Open Heart Surgery, Johannesburg. At the Medical Association meeting to be held at Medical House, Esselen Street, Johannesburg, on 18 November 1958, Dr. Vernon Wilson, Senior Physician of Baragwanath Hospital, will speak on the experience gained in open heart surgery with the use of the pump oxygenator in the dog laboratory, Mr. D. Fuller, Thoracic Surgeon, will discuss the problems of pump oxygenator and the various types of 'heart-lung' machine, and Mr. D. Adler, Thoracic Surgeon, will speak on clinical experiences in open heart surgery in Johannesburg. Mr. L. Fatti, Thoracic Surgeon, and Dr. L. Braudo, Paedjatrician, will open the discussion.

* * *

The Fourth International Course in Tomography will be held at the Institute of Radiology, University of Genoa, Italy, in September or October 1959, under the direction of Prof. Alessandro Vallebona. The course will last 8 days and will deal particularly with recent progress in tomographical methods. All lectures, while read in the original language, will be simultaneously translated into Italian, French, English, German and Spanish.

Those who are interested in attending the course are requested to advise the General Secretary, without definite engagement on their part, in order to facilitate the organization of the Course. Those who have decided to attend the course should inform Prof. Neopolo Macarini, General Secretary (Instituto di Radiologia della Università—Ospedale San Martino—Genova—Italia), who will furnish details on request.

* * *

Unie van Suid-Afrika, Departement van Gesondheid. Nuusbrief nr. 44 *van* 1958. Opgawes van gedugte epidemiese siektes en poliomiëlitis in die Unie gedurende die tydperk 24-30 Oktober 1958.

Pes, Pokkies. Geen.

Tifuskoors. Kaapprovinsie: 1 (Een) Naturellegeval van tifuskoors aangemeld vanuit die distrik Glen Grey.

	Poliomiëlitis				
	Bl.	*Nat.*	*Kl.*	*As.*	*Totaal*
Kaapprovinsie ..	–	2	1	–	3
Natal	–	1	–	–	1
Totaal ..	–	3	1	–	4

Plaaslike Besture		*Bl.*	*Nie-bl.*
Kaapprovinsie:			
Oos-Londen-afdelingsraad ..	P	–	1
Steynsburg-afdelingsraad ..	P	–	1
Uitenhage munisipaliteit	S	–	1
Natal:			
Marianhill-gesondheidskomitee ..	P	–	1

P = Plattelands. S = Stedelik.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

ZACTIRIN

Wyeth Laboratories (Pty.) Ltd. announces Zactirin and supplies the following information:

Zactirin is a potent, non-narcotic analgesic containing the new chemical compound, ethoheptazine, proved as effective as codeine in relieving moderately severe pain (i.e. pain too severe to be relieved by aspirin or APC compounds, but not severe enough to warrant morphine-like drugs). Zactirin does not produce any of the undesirable side effects of codeine (constipation, dizziness, nausea, etc.), and it does not cause addiction.

Zactirin has been found particularly effective in the relief of low back pain and pain of minor traumatic injuries, joint pains and related disorders (arthritis, bursitis, neuralgia, synovitis, etc.), abdominal, perineal and menstrual pains, and post-operative and dental pains.

Composition. Each distinctive yellow and green Zactirin tablet contains 75 mg.% ethoheptazine citrate (yellow layer) and 5 gr. of acetylsalicylic acid (green layer).

Dosage. For moderate to moderately severe pain, 2 Zactirin tablets, 3 or 4 times daily, is suggested the routine dose. For mild pain, 1 tablet 3 or 4 times daily, may suffice. The total daily dosage should not exceed 8 tablets.

Supplied in bottles of 24 tablets.

MAREVAN

Evans Medical Supplies announce the availability of Marevan and provide the following information:

Marevan (Warfarin Sodium, Evans) is an oral anticoaguiant. A clinical trial on a series of 175 patients showed that Marevan is extremely easy to control as there is very little fluctuation in individual dosage requirements. The initial dose was 35-40 mg. for seriously ill patients and those over 75 years; 40-50 mg. was given to more robust patients under the age of 75. A therapeutic level of prothrombin was reached in 36 hours. The first maintenance dose was given on the third day. The daily dose required to maintain the prothrombin time at 2½ times normal varied from 2-15 mg., the average being 9 mg.

The daily variations of dosage necessary are small, as little as 0·5 mg. usually causing a change in the prothrombin time. Because the effect of such variations is not apparent for some 36 hours, the dose is best considered in terms of a 3-day cycle so as to maintain the prothrombin time most consistently at the optimum level. The strengths of Marevan have been so designed that the total dose for such a 3-day period may be given with the minimum daily variation. Thus the minimum variation in the 3-day dose is provided by the addition or withdrawal of half a 3-mg. tablet over the period. On the other hand, using both tablets, any specified dose may be given exactly to 0·5 mg.

Marevan is available in tablets of 3 mg. (coloured blue) and 5 mg. (coloured red) in containers of 100 tablets. The 5-mg. tablet is primarily intended for the initial dose. With the degree of control which can be established with the 3-mg. tablet, it should rarely be necessary to use 5-mg. tablets for maintenance therapy.

Distributors: Evans Medical Supplies, P.O. Box 6607, Johannesburg.

Reference: Toohey, M. (1958): Brit. Med. J., **2**, 892.

REVIEWS OF BOOKS : BOEKRESENSIES

IDEALS IN MEDICINE

Ideals in Medicine. A Christian Approach to Medical Practice. Edited by Vincent Edmunds, M.D., M.R.C.P. and C. Gordon Scorer, M.B.E., M.D., F.R.C.S. Pp. xi+192. 12s. 6d. London: The Tyndale Press. 1958.

In the mass of medical literature which is printed in these modern times, comparatively few books are devoted to the important subject of medical ethics. The editors and their collaborators in producing this book have set out the Christian approach to the practice of medicine and it is published for the Christian Medical Fellowship.

In a world of change it is important that the young practitioner should have a sound foundation of faith and a philosophy of life which will sustain him in the many difficulties of conscience he will encounter in his practice. Although written primarily for doctors of the Christian faith others also may find it of interest and benefit.

A.H.T.

PHOTOFLUOROGRAM INTERPRETERS

Testing and Teaching of Photofluorogram Interpreters. By Helge Nielsen. Pp. 33. 6 Figures. Dan. kr. 9.50. Copenhagen-Ejnar Munksgaard Ltd. 1957.

This very interesting monograph deals with the interpretation of photofluorograms of chests. The author, like many other investigators, has noted that there is a very considerable discrepancy in the reading of chest films by different experienced observers.

He points out that there is no known combination of X-ray technique and method of reading of films which ensures a certain and unmistakable interpretation of all the films in a series. A reader is frequently not consistent with himself in examination of the same films.

In order to try to prevent errors, and to improve the teaching of the interpretation of photofluorograms and radiographs of the chest by radiological students, the author has devised a phantom superimposed upon films of normal chests. The phantom produces false infiltrates simulating small lesions.

The method consists firstly of the study of a normal fluorogram on which a localizing graph is superimposed, without and with the phantom, and then of the phantom. By these means the student can check his observations.

The author believes that by this method the student develops a procedure for more acute detection.

It is felt that there are possibilities in the method, but more information must still be awaited before a decision is taken to adopt a somewhat laborious teaching technique.

J.N.J.

CORRESPONDENCE : BRIEWERUBRIEK

PROPOSED FOOD HYGIENE CAMPAIGN

To the Editor: A Food Hygiene Week will be conducted on 16-22 March 1959 by the Witwatersrand and Pretoria Public Health Consultative Committee in the region served by the Committee's affiliated local authority members. This Committee consists of medical officers of health, chief health inspectors, veterinary surgeons and other health officials of Johannesburg, Pretoria, the Reef towns, Vereeniging and smaller centres in the Transvaal. It is organized for the purpose of (*a*) collecting and disseminating information on matters relating to public health, (*b*) mutual consultation and discussion, (*c*) advising local authorities or other bodies on matters of public health, and (*d*) promoting cooperation amongst local health authorities. The Union Health Department, Department of Defence, S.A. Railways and Harbours, Bureau of Standards, Transvaal Education Department, University of the Witwatersrand, University of Pretoria, and Health Officials' Association of Southern Africa, are also represented on the Committee and the United Municipal Executive and Transvaal Municiapl Association frequently make use of the services of the Committee for advice and guidance in regard to public-health matters.

While it is realized that the education of the people in food hygiene must be a continuous effort, nevertheless it is felt that a special Food Hygiene Week to start the educational campaign would be of the greatest value. The 'Week' will be organized on a regional basis and will include the whole of Johannesburg, Pretoria, the Reef towns, Vereeniging, Vanderbijl Park, Witbank, Heidelberg and Rustenburg. Because there are not enough public-health personnel to conduct the Food Hygiene Week campaign adequately, it has been decided to enlist the aid of the public.

The Mayor of Johannesburg has adopted the slogan 'Health and Hygiene' for the forthcoming year, and has promised the strongest support for Food Hygiene Week. It is also hoped that many Reef Mayors will adopt the same theme for their year of office.

As doctors, especially general practitioners, have such ready access to the homes of the public, we would ask their cooperation in discussing this topic, and giving their patients the benefit of their expert information, knowledge and advice in this field. It would be of value also if doctors would notify their medical officers of health of any occurrence of gastro-enteritis suspected as being due to food poisoning.

Aubrey E. Levy
Secretary
Witwatersrand and Pretoria Public Health Consultative Committee
P.O. Box 8242, Johannesburg
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